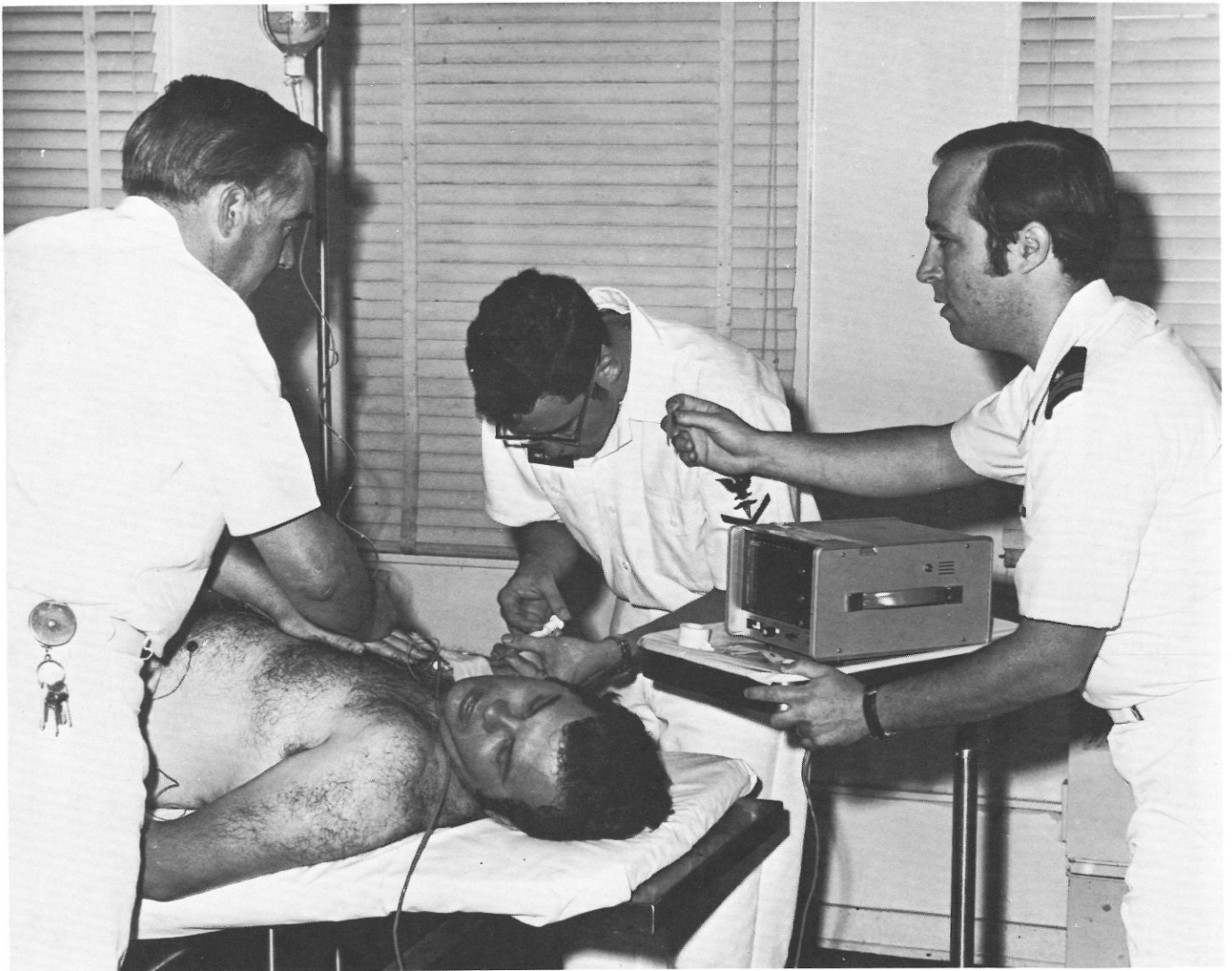




**U. S.
NAVY**

Medicine



September 1972

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The issuance of this publication approved in accordance with NAVEXOS P-35.

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ERRATUM11

Credits: All pictures are Official U.S. Navy Photographs unless otherwise indicated.

The front cover photograph symbolizes the constant interaction between Navy physicians and corpsmen, through formal instruction and on-the-job training. In keeping with the current emphasis on education and training, attention is invited to feature articles indexed above. The photo reappears on page 10.

Photo on page 2 was taken during the change-of-command ceremony of the Naval Graduate Dental School at the National Naval Medical Center, Bethesda, Md., on 4 Aug 1972.

The continued support of Ms. S.B. Hannan, BUMED Code 2133, and the Illustration and Exhibits and Photography Divisions of the Medical Graphic Arts Dept., Naval Medical Training Institute, NNMC, Bethesda, Md., is gratefully acknowledged.



from the Chief

We in the Medical Department have long emphasized the concept of off-duty, volunteer-educational programs through our part-time outservice training program.

Still further efforts are required if we are to attain the goal of developing an "all-volunteer" Navy comprised of highly motivated and well-educated professionals. Every possible educational opportunity should be made available to our personnel, especially our enlisted members.

A highly responsive program of educational counseling and intermediary coordination with local universities is needed. I urge all members of the Navy Medical Department to participate at all appropriate levels in this worthwhile endeavor. The dividends accruing from this investment of time and interest cannot be overestimated.





HOSPITAL CORPS SCHOOL

Current Training Patterns

By LCDR Shirlee C. Hicks, NC, USN,
Instructor, Hospital Corps School,
Great Lakes, Illinois.

The primary mission of "A" School, Hospital Corps School is to train selected naval personnel for the Hospital Corps. This has been the mission of Hospital Corps School, Great Lakes since 1923.

At the present time the school at Great Lakes is one of only two Hospital Corps Schools in operation, and is the only facility which is training women for the Hospital Corps.

During the calendar year 1971, the school enrolled 2,843 students and graduated 2,381.¹ Current enrollment is 999, which includes 207 women. Since

enrollment at "A" school is a reflection of the needs of the fleet, the total number of students aboard at any one time does fluctuate. To further meet the demand, Hospital Corps School is authorized to advance 15 percent of each graduating class to Hospital Corpsman Third Class (HM3).²

Training individuals is sometimes approached by applying the JUG THEORY, whereby human beings become jugs into which something called "learning" can be poured.³ This concept has not gained acceptance, however, at Hospital Corps School, Great Lakes where many new methodologies of instruction are currently being developed and instituted.

The above paper was presented at the Inservice Education Workshop held in April 1972 at the National Naval Medical Center, Bethesda, Md.

1. "History and Physical Facilities of Naval Hospital Corps School, Great Lakes, Ill.," p 3, 1 Jan 1972.

2. Bureau of Naval Personnel Manual. 22-6A, Oct 1971.

3. The Journal of Continuing Education in Nursing, 2:7, Nov-Dec 1971.

Implementing major curriculums or making substantial revisions is as challenging as it is difficult. Major clinical teaching is presently accomplished by the block method at both Hospital Corps Schools. The block-method curriculum consists of the following subjects: Anatomy and Physiology, 80 hours; First Aid and Emergency Procedures, 120 hours; Preventive Medicine, 40 hours; Principles and Techniques of Patient Care, 240 hours; Medical Mathematics, 35 hours; Materia Medica and Toxicology, 65 hours; and Military Requirements, 60 hours.

The current 16-week block-method curriculum totals 640 hours, of which 520 hours are devoted to DIDACTICS and 120 hours to PRACTICAL EXPERIENCE.

It is significant that this system only provides for 120 hours of practical experience, 70 hours of which are devoted to Principles and Techniques of Patient Care. During these 70 hours, however, each student averages a mere three hours in which to demonstrate his ability: to make one unoccupied bed, give one bed bath, record vital signs (TPR's and BP's) on three people, pour three oral medications, give one subcutaneous and intramuscular injection, do one venipuncture, and change one sterile dressing.

As of 1 July 1972, both Hospital Corps Schools implemented a 14-week curriculum. Few noticeable changes in the didactic portion of the overall teaching pattern have been made, but the reduction in course length has drastically reduced the number of practical hours, thereby curtailing ward experience in particular.



LCDR Joan E. St. Angelo, NC, USN (far right) leads practice procedure in bed bath skill.



Instructor Luella M. Benning, NC, USN (standing, right) directs vital signs skill practice procedure.

As of 1 July 1972, the male student input increased to 90 per week,⁴ necessitating the convening of two companies every other week.

The "Accelerated" Program⁵ is a pilot teaching pattern which is being implemented at Hospital Corps School, Great Lakes. Selection of participants is determined by the following considerations: (1) Two or more years of college study, (2) Verification of transcript, and (3) Motivation for the program.

Following selection the student embarks on an eight-week abbreviated course of formal instruction and self-study combined. During the entire eight weeks the individual student must maintain a grade point average of 80 percent or above. If the student is unable to achieve this level of performance at any time, he is immediately returned to his regular company.

The most dynamic teaching change at Hospital Corps School, Great Lakes is the "Naval Medical Research Institute's Subproject No. M43-03X.05⁶ which will redistribute the existing subject matter into an eight segment task-based curriculum.

The eight segment task-based curriculums are structured as follows: (1) Pharmacology and Patient Care, (2) Patient Positioning and Movement, (3) Patient Nutrition and Fluids, (4) Patient Elimination Support, (5) Patient Cardiopulmonary Support, (6) Patient Skin Care, (7) Patient-Corpsmen Relationships, and (8) Integration Unit.

4. "History and Physical Facilities of Navy Hospital Corps School, Great Lakes, Ill.," p 3.

5. Ibid. Accelerated Program. pp 1-5, Mar 1972.

6. Upchurch, Ouida C., et al.: Information On Subproject M43-03X.05. Bethesda, Md., Sept 7, 1971.

The intent of this research project is to apply teaching concepts with an integrated approach, emphasizing comprehensive nursing care of patients in any setting.⁷

The first segment of the pilot project, Pharmacology and Patient Care, was completed during October 1971. At that time a decision was reached to make a major curriculum revision and to implement Pharmacology and Patient Care as a temporary part of the basic Hospital Corps School curriculum.

This entailed the elimination of 126 hours of curriculum and substituting only 81 hours of Pharmacology and Patient Care, to effect a saving of 45 teaching hours.

The Pharmacology and Patient Care segment consists of eight units. Each unit is essential in the acquisition of sufficient knowledge for safe administration of medications by Hospital Corps personnel.



LCDR Luella M. Benning, NC, USN (seated, left) directs subcutaneous injection skill practice procedure.



Instructor LT Patricia C. Summers, NC, USNR (seated, right) guides skill practice procedure in oral medication.

The following units are addressed within the Pharmacology and Patient Care segment: (1) Introduction to Pharmacology and Patient Care, (2) Abbreviations and Symbols, (3) Action and Dosage, (4) Mathematics, (5) Administration of Medications, (6) Venipuncture, (7) Pharmacological Preparations commonly used in drug therapy and patient care, and (8) Toxicology and Patient Care.

The second segment, Patient Positioning and Movement, is currently in an experimental phase and will not be implemented until the remaining six segments have been tested.

7. Upchurch, Ouida C., et al.: Comparison of Two Curricula for Training Basic Hospital Corps School Students. Naval Medical Research Institute, Subproject No. M43-03X.05, Bethesda, Md., Report No. 1, 16 Mar 1971.

It is important to recognize that even with all of the various teaching patterns and advanced teaching techniques being utilized and explored, the present Hospital Corps School graduate is not capable of handling patient care procedures without further guidance, supervision and instruction. These men will not only require continued, planned, supervised ward instruction, but they must also receive guidance and formal instruction through a well-organized Nursing Inservice Education Department. Beyond the immediate responsibility of the Nursing Service to support these fine young hospital corpsmen, all members of the Navy Medical Department are urged to combine their collective interests and talents to the fullest, to ensure that our Navy Corpsmen will retain their well-deserved reputation for being the first, with the most.



Preceding student performance, CDR B. Mack, NC, USN demonstrates venipuncture skill.

Training of Military Enlisted Paramedical Personnel for Greater Use in Civilian and Military Practice of Surgery

By RADM Horace D. Warden, MC, USN,* Commanding Officer, Naval
Hospital and Hospital Corps School, San Diego, California.

This article originally appeared as follows: Training of Military Enlisted Paramedical Personnel for Greater Use in Civilian and Military Practice of Surgery, AMERICAN JOURNAL OF SURGERY 124:2, Aug 1972. We are indebted to the author, and to THE AMERICAN JOURNAL OF SURGERY for granting exceptional permission to reprint the paper here.

This is not the usual type of paper presented at a prestigious scientific meeting, but at this time in the development and continuing progress of surgical practice in our country, the training and production of all surgically oriented talent is of great importance. This training includes not only surgeons, as all of you are, but also training of additional surgical talent — surgical assistants, paramedical assistants, nursing assistants, etc.

*RADM Warden delivered this paper at the 1972 Annual Scientific Meeting of the Pacific Coast Surgical Association. He retired from active duty on 1 Jul 1972 and was relieved by RADM H.G. Stoecklein, MC, USN.

I am currently a representative of Military medicine and involved with the training of many military enlisted paramedical personnel, many of whom are receiving training in surgical fields. When these young men and women leave military service, it is our hope that they will also be prepared for useful civilian employment in their specialties. Many of these young men and women are highly motivated to continue working in health care areas, but are unable to qualify for state registration and licensure as technicians without additional college-level time and training after separation from military service.

In August 1971 a three-page questionnaire was mailed to every active, domestic Fellow of the American College of Surgeons, totaling over 27,000. One of the included questions was stated as follows: "If a medically trained, experienced and competent non-M.D. were available to assist you with surgical procedures, when (if ever) would you most likely utilize his services?"¹

Over 15,000 of these questionnaires were returned to College headquarters, and the replies to this particular question were as follows:

Now	8,291	54%
Not now, but next 1-4 years	1,220	7%
Not now, but 5-10 years hence	438	2+
Little likelihood of utilizing such a person	4,014	26%
None of the above	925	6+

In October 1971 at the annual meeting of the Board of Governors of the American College of Surgeons, one of the ten study and discussion groups convened at that time concerned allied health personnel. How and where do they function? Who pays them and how much?²

It was the consensus of that discussion group that the excellent M.D. training programs should not be sacrificed for possibly inferior allied health programs, and that the Armed Forces should be encouraged to develop their programs. There was further discussion of the controversial question of upward mobility for surgical technicians to a role as assistant in surgery, and that roles of each individual position should be spelled out in hospital bylaws.

Since almost two-thirds of the respondents to the August questionnaire indicated a need for surgical assistants, one might then ask what is available?

I shall not speak today of the traditional surgeons' assistants, our surgical nurses, but of another reservoir of talent, our military enlisted personnel being trained in surgical paramedical fields.

Physicians have always had assistants who could render varying degrees of medical care. The present day Russian feldsher continues a profession introduced in the seventeenth century.³ Another medical auxiliary

popular in several of the underdeveloped countries is known as the "Assistant Medical Officer." Although his training and facilities are limited, they are adequate for his type of practice.⁴ In our country, several civilian programs exist, more are being initiated or implemented, and there are several military programs currently in operation.

Most of you have had military duty earlier in your careers and are familiar with the extensive use of enlisted paramedical personnel in our armed services. Many of you couldn't have performed your professional duties nearly as well without them. Some of us owe our lives to the services and talents of these enlisted colleagues.

At the present time, over 15,000 enlisted paramedical technicians are on active duty in the Navy; over 36,000 in the Army; and over 9,000 in the Air Force.

At the present time, there are an additional 18,400 enlisted military paramedical personnel under training – 2,900 Navy; 12,000 Army; and 3,500 Air Force.

Of these, 5,904 are under training in surgical specialties as listed in Table 1.

Recognizing the importance of military experience in allied health fields, the American Medical Association established a Task Force on Military Allied Medical Education, composed of representatives from the American Medical Association, Army, Navy, and Air Force. This group extensively studied military training in allied health fields, and following their recommendation, the American Medical Association Council on Medical Education has approved 61 military programs.

Several programs are now conducted jointly with junior colleges and college credits are earned. The Navy is currently working out an agreement with a medical school to establish associate and baccalaureate

TABLE 1. Military technicians in surgical or surgical related specialties.

	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>
Operating Room Technicians	870	1,412	875
Urology Technicians	91	—	40
EENT Technicians	241	427	98
Cardiopulmonary Technicians	76	250	80
Cast Room Technicians	102	204	114
Orthopedic Appliance Technicians	11	103	94
Oral Surgery Technicians	100	686*	—
Total	1,491	3,082	1,331

*Dental Specialist (includes Oral Surgery)

degree programs for all Navy medical technician schools, wherever located. Our training courses in surgical specialty techniques include core curriculum training in such areas as: Care and Safety of the Patient During Surgery; General Principles of Operating Room Technique and Surgical Procedures; Basic Operating Room Procedures; and Management of Surgical Supplies, Instruments and Equipment. We have also recommended establishment of an Orthopedic Assistant Technician specialty which would provide a more diversified training and replace the current Orthopedic Cast Room Technician.

We are currently working with health care officials and agencies in California to structure military training programs to State needs and requirements, so that our enlisted paramedical personnel will be eligible in all respects for licensing or registration prior to completion of obligated military service. Many of these military personnel are already "moonlighting" as technicians and health care personnel in civilian clinics and hospitals in their off-duty hours, but at much lower pay levels than are available following full State accreditation as technicians.

The widely publicized Physicians' Assistant programs are still subject to much comment and criticism, but are serving a very useful purpose in some areas. The questions of professional liability, licensure, amount of training needed, and supervision required, are still not legally determined in some States.

The Navy currently has twelve men under training as Physicians' Assistants, leading to a baccalaureate degree and warrant officer status. We hope to soon place many more in this program.

The Army program is scheduled to commence this month at U.S. Army Medical Field Service School, Fort Sam Houston, Texas.

The Air Force convened its first Physicians' Assistant class at Sheppard Air Force Base, Wichita Falls, Texas in July 1971.

The MEDEX program, started in the State of Washington, was designed to create a new class of medical professionals to help overworked physicians to provide more and better medical care.⁵ This program takes advantage of training given medical corpsmen by the Armed Services, supplemented by a three-month,

on-campus period of retraining and orientation, but not requiring admission to a university. This is followed by a year with a physician preceptor who directs the continuation of conversion from military specialist to civilian medical professional. Currently MEDEX projects are in operation in five States.

How does one get in touch with available talent?

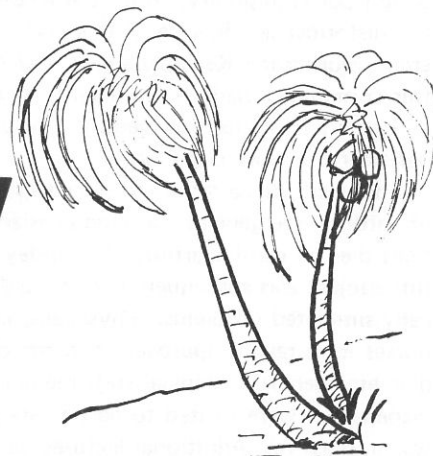
- a. OPERATION MEDIHC (Military Experience Directed Into Health Careers) is a cooperative program of the Department of Health, Education, and Welfare and the Department of Defense to help men and women, trained in health skills while in military service, to capitalize on those skills when they return to civilian life. There is now a MEDIHC agency in most States.
- b. MEDEX — 444 N.E. Ravenna Blvd., Seattle, Washington 98115.
- c. Navy, Army and Air Force medical units everywhere can procure specific information for you.

This paper is an attempt to call your attention to a reservoir of talent which can be put to great use in many areas of surgical practice. I am sure that most of the members of this Association, with your well-established practices, and with your well-trained surgical nurses and other special assistants, will have little need for the types and levels of talent I have been discussing today. However, you all have colleagues who are practicing in less favored areas, with lesser experience, and who may need assistance such as we in military service can provide through our paramedical training programs, which are now designed not only for military needs but for civilian needs as well.

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4. Rosinski EF and Spencer FJ: The training and duties of the medical auxiliary known as the Assistant Medical Officer. Am J Public Health 57:1663, 1967.
5. Smith RA: MEDEX, a demonstration program in primary medical care. Northwest Med 68:1023, 1969.

MEDICAL EDUCATION AT NAS BARBERS POINT



By LT Harris S. Vernick, MC, USNR, Cardiology and Instruction Officer;
CAPT Glenn F. Kelly, MC, USNR, Senior Medical Officer, and; LCDR
Frank A. Munden, MC, USNR, Pediatric Officer and Chief of Clinical
Services; Medical Department, Naval Air Station (NAS), Barbers Point,
Hawaii.

When a physician is stationed at an isolated dispensary, it is easy for him to accept a way of life leading to sheer professional stagnation. There are no examinations to stimulate him, challenging patients who are seen in his practice are quickly referred to specialists or large hospitals, and follow-up is usually incomplete or entirely lost. If he succumbs to this way of life the physician will acquire two or three easy years of dispensary duty, then suddenly he will be struck by the realization that this stagnation has substantially diminished his medical knowledge. He will blame this loss on the military service, remembering his years on active duty with bitterness and regret.

At this dispensary, the medical staff has decided to prevent stagnation by augmenting a program of continuing medical education for physicians, nurses, and corpsmen. The medical staff consists of seven flight surgeons, five general medical officers (GMOs), one family practitioner, one pediatrician and two partially-trained internists. Among the 16 physicians, interest

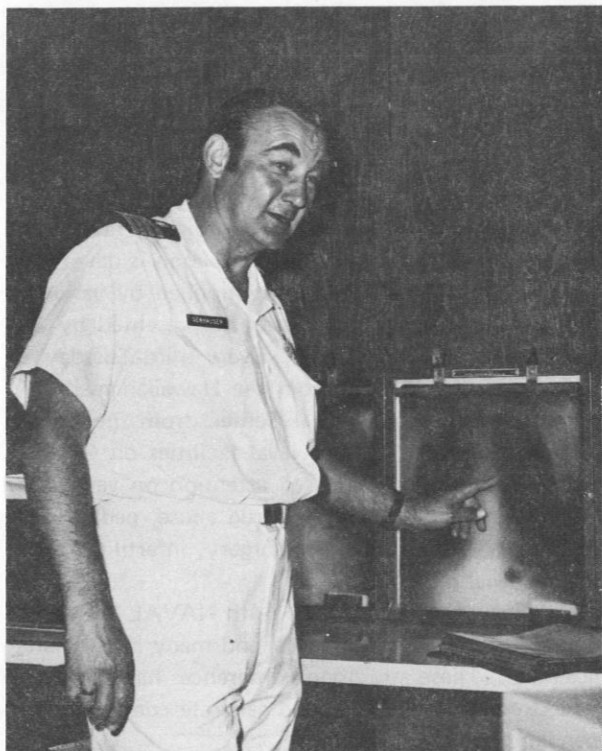
or training in most specialties of medicine and surgery is represented. Every Tuesday afternoon is devoted to educational programs; films are supplied by various drug companies and a discussion is presented by a member of the medical staff. Every third Tuesday, a guest lecturer is invited from the Hawaiian medical community, Tripler Medical Center, from the mainland, or from one of the Naval facilities on Oahu. Recent lectures have focused attention on venereal disease, cardiac arrhythmias, drug abuse, pediatric respiratory disease, thoracic surgery, infertility, and medico-legal problems.

All Navy physicians in the 14th NAVAL DISTRICT are invited to the conferences, and many have often attended. These afternoon conferences have proved to be extremely educational and generate continued independent study.

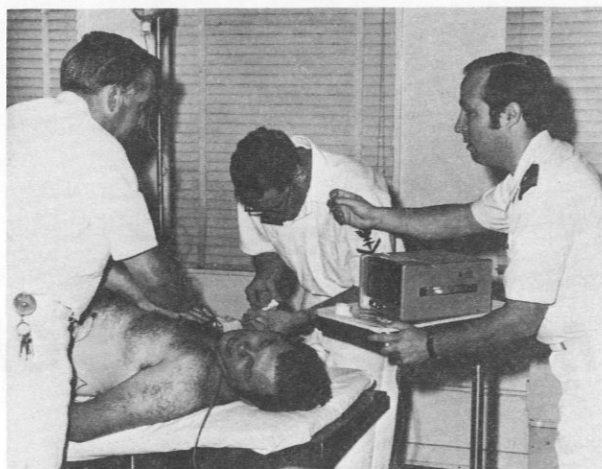
The formal lecture series has been supplemented with several special programs. The first of these developed when physicians expressed an interest in

learning more about leprosy. A program was arranged that offered a splendid lecture at Hale Mohalu, the Hansen's disease hospital on Oahu, and a tour conducted by a patient at Kalaupapa, Molokai, the historic leper community. Both the medical aspects and the historical significance of this disease were considered. During the Kalaupapa visit it was noted that this community had no physician. Now the physicians of Barbers Point furnish medical care on a voluntary basis for the leper community.

The need for continuing training in the management of cardiac emergencies was reemphasized when a patient died in cardiac arrest. A two-day program on this subject was subsequently presented using realistically-simulated problems. Physicians, corpsmen and nurses were taught approved methods of handling cardiac emergencies. Medical staff members from other dispensaries were invited to participate and attendance was impressive. Additional lectures have been devoted to the etiology, medical management of adult and pediatric cases, newer drug treatment, cardiac monitoring, and nursing aspects of cardiac arrest. Corpsmen attended specific lectures on the initial therapy of cardiac arrest, what to do until the physician gets there, and how to assist in the usual procedures and care



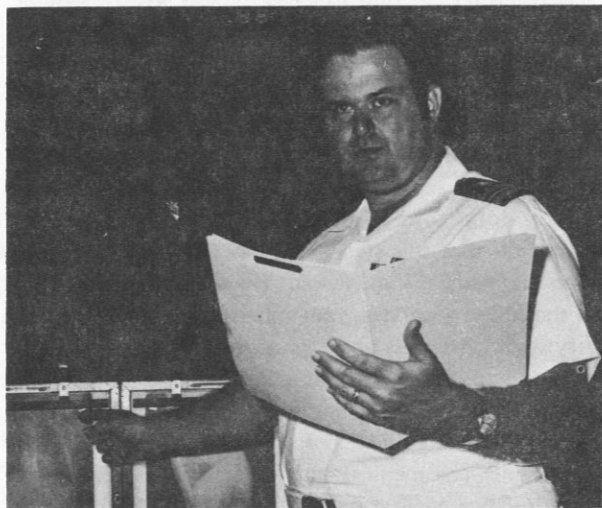
CAPT Senhauser, MC, USNR-R, Professor of Pathology, University of Missouri School of Medicine, participates as guest lecturer at Barbers Point.



Dr. Vernick (far right) instructs corpsmen during simulated episode of cardiac arrest.

employed. The second afternoon of the program was concerned with simulated cardiac arrest. Physicians, corpsmen and nurses were placed in teams. We utilized two subjects to simulate cardiac arrest arising out of two different hypothetical situations, pulmonary embolism vs. hypovolemic shock. Prepared EKG rhythm strips were used to demonstrate many of the possible arrhythmias occurring during resuscitation, and the drug therapy for each variety was discussed. It is planned to repeat this particular program every four months to train newly-assigned physicians, nurses, and corpsmen, and to provide a good periodic review of the subject for other personnel.

This is the first introduction to Naval medicine for many staff physicians. Young medical officers fresh



LCDR Frank Munden, MC, USNR, Pediatrician, lectures to the medical staff.

from internship or residency, are particularly interested in joining the local academic environment and continuing their medical education. To fill this need, staff members joined with the University and organized the CINCPACFLT and University of Hawaii School of Medicine Medical - Surgical Conference. The first Conference took place on 6 June 1972, at the Officers' Club, Naval Station, Pearl Harbor, Hawaii. The subject was "Glomerulonephritis." A panel of nine physicians, representing the Army, Navy, the University of Hawaii, and several of the civilian hospitals, presented different clinical and research aspects of the disease. This Conference will be open to all military and civilian physicians, medical students and paramedical personnel.

In order to continue and improve this series of conferences, we have applied for grants from several of the pharmaceutical companies to invite speakers from the mainland. In September, we hope to provide a week-long conference entitled, "Cancer Rounds." Guest physicians will be invited to speak on various aspects of several different types of cancer. For February of

1973, a conference on infectious diseases is planned. Speakers have been scheduled and it is hoped that a week-long conference at Pearl Harbor will be offered. Other topics for future conferences include rheumatoid diseases, anemia, coagulopathies, hypertension, jaundice and cardiovascular disease.

The most recent educational undertaking was the creation of a paramedical course for corpsmen. Lectures are given each week on the more elementary aspects of the same disease processes which the physicians are studying. There have also been special programs for corpsmen including participation in the cardiac arrest program, a course on electrocardiograms and cardiac monitoring; during these sessions the corpsmen were instructed in the use of, and the principles behind, the EKG.

We are most enthusiastic about these programs. Because of them, the physicians at Barbers Point need not worry about professional stagnation. Their time in the Navy will come to be regarded as one which offered continued interest and professional stimulation. 🌿

ERRATUM

An inadvertent error appeared in the caption under a photograph reproduced in U.S. NAVY MEDICINE 60:43, Jul 1972. We are pleased to reprint the picture here with corrected caption.



On 14 Dec 1945, Captain Dauser (left) was presented the Distinguished Service Medal by Secretary of the Navy James Forrestal, who later served as the first Secretary of Defense. CAPT Sue Dauser, NC, USN, retired from active duty on 1 Apr 1946.

The error is regretted. Our thanks to RADM Lamont Pugh, MC, USN (Ret.), Surgeon General emeritus (1951-1955), for calling the error to our attention. Secretary of the Navy Forrestal became the first Secretary of Defense in 1947. 🌿

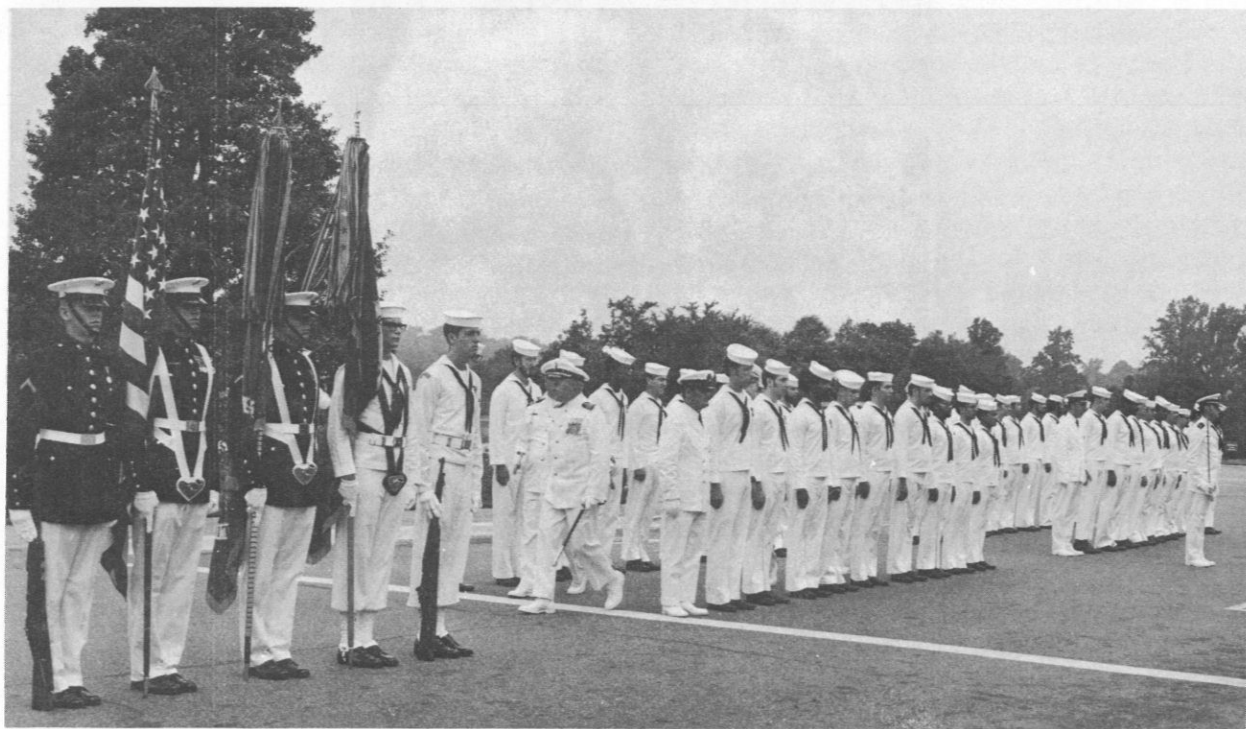
NAVAL GRADUATE DENTAL SCHOOL

CHANGE OF COMMAND

The Naval Graduate Dental School is the Navy's primary educational facility for officers of the Naval Dental Corps. In addition to first-year graduate courses in general dentistry and five dental specialties (equivalent to first-year residencies), for which students may earn the degree of Master of Science in Special Studies (Oral Biology) from The George Washington University, the School provides second-year residencies in endodontics, oral diagnosis and oral medicine, oral pathology, periodontics, and prosthodontics, and also a third-year residency in maxillofacial prosthetics. The School also provides postdoctoral fellowships and a series of short continuing-education courses annually; trains dental technicians in certain specialties; conducts research;

provides dental care for authorized personnel of the National Naval Medical Center and other authorized and eligible persons, as required, for the teaching programs; and provides oral histopathology service for all naval dental facilities ashore and afloat.

At an impressive change-of-command ceremony held at the National Naval Medical Center, Bethesda, Md., on 4 Aug 1972, RADM Wade H. Hagerman, Jr., DC, USN relieved CAPT William G. Wohlfarth, Jr., DC, USN, as Commanding Officer of the Naval Graduate Dental School. This marks the first time that an officer of flag rank has been ordered to assume the duties of CO in the 50-year history of the Naval Graduate Dental School.

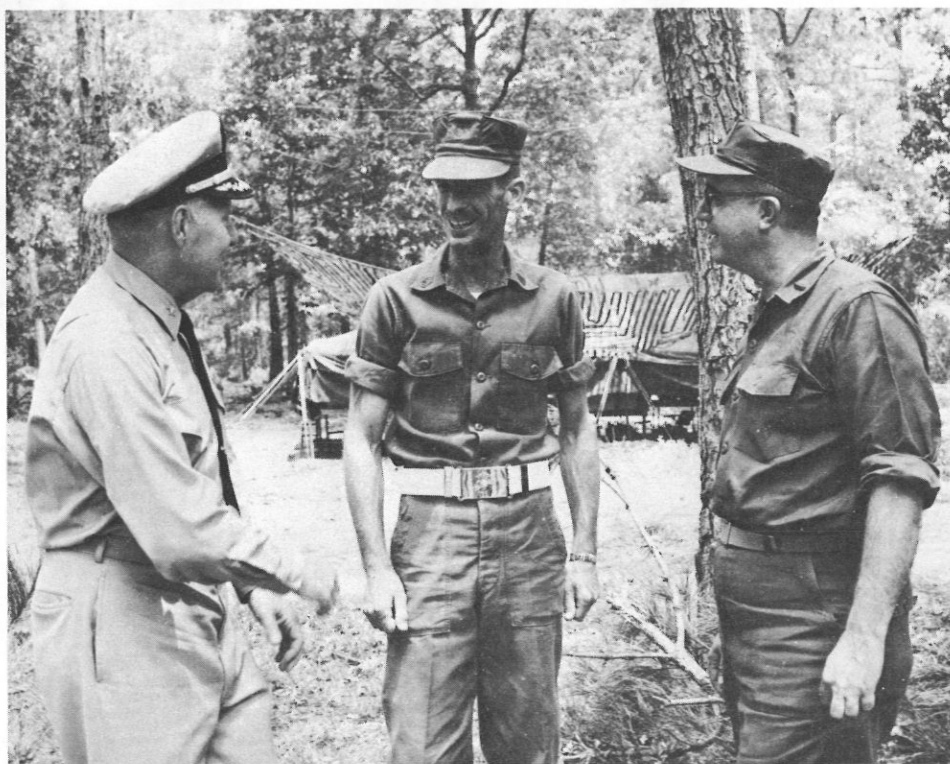


A native of Tazewell, Va., RADM Hagerman received his commission as an ensign, Naval Reserve, while enrolled in the University of Louisville, School of Dentistry, Louisville, Ky., where he received his D.M.D. degree. Immediately after graduation, he was ordered to active duty at the Naval Training Center, Camp Peary, Va., as a LT(jg). On completion of that assignment and a tour of sea duty, he was discharged to inactive duty in June 1947, and entered private practice at Matewan, W. Va. In August 1950, he returned to active duty and has held a series of progressively more responsible positions in the Naval Dental Corps. In September 1954, he reported to the Naval Dental School as a student in the General Postgraduate Course, remaining after completion of the ten-month course as a staff member until March 1959, during which time he completed an advanced course in prosthodontics.

In April 1959, RADM Hagerman reported to the Naval Support Activity, Naples, Italy, as an assistant

dental officer. After completing his tour of duty there, he returned to the Dental School in July 1962, where he held multiple positions as Chief of the Fixed Partial Denture Division, Chief of the Clinic and Laboratory Division, and Course Director of the fixed partial denture courses. On 3 July 1969, he assumed command of the 4th Dental Company (later redesignated the 22d Dental Company), Fleet Marine Forces, Atlantic, Camp Lejeune, N.C. He was reassigned as Commanding Officer, Naval Dental Clinic, Marine Corps Base, Camp Pendleton, Calif., on 28 April 1972, and was promoted to Rear Admiral on 1 July 1972. Before relinquishing command at Camp Pendleton on 15 July, he accepted delivery of the newly constructed Naval Dental Clinic facility which includes 24 dental operating rooms.

CAPT Wohlfarth, who has been assigned to special duty in the Bureau of Medicine and Surgery, has also held a series of progressively responsible positions since accepting a commission on 18 October 1940. During World War II, he served as the dental officer in the



OFFICIAL MEETING—Thirty-four graduate officers from the Naval Dental School visited the Marine Corps Base, Camp Lejeune, N.C., from 10 to 13 May 1970, to observe field exercises held by the 22d Force Dental Company, Fleet Marine Forces, Atlantic. Above, the School's Commanding Officer, CAPT William C. Wohlfarth, Jr., DC, USN (left) thanks the bandmaster who welcomed the visitors with a musical selection as CAPT Wade H. Hagerman, Jr., DC, USN (right), then Commanding Officer of the 22d Dental Company, looks on.



USS LANGLEY, serving in the Pacific Theater. From August 1965 to August 1967, he served in the dual capacity of Commanding Officer of the U.S. Naval Dental Clinic, Yokosuka, Japan, and Force Dental Officer on the Staff of the Commander, Naval Forces, Japan. He became Executive Officer of the Naval Dental School on 30 August 1967 and assumed command on 28 June 1968. Highlights of this last assignment included a change from provisional to full accreditation for the Naval Graduate Dental School by the Council on Dental Education, American Dental Association; and negotiation of an affiliation with The George Washington University. A native of New York, CAPT Wohlfarth received a degree in philosophy from Brown University, Providence, R.I., and a D.D.S. degree from Columbia University, New York, N.Y. In 1953, he completed a residency in prosthodontics at the Naval Training Center, Great Lakes, Ill. CAPT Wohlfarth plans to retire on 1 October 1972.—PAO, NNMC, Bethesda, Md.



RE-MEETING—In a change-of-command ceremony held at the National Naval Medical Center on 4 Aug 1972, RADM Hagerman, DC, USN (left) relieved CAPT Wohlfarth, DC, USN (right) as Commanding Officer of the Naval Graduate Dental School. 🇺🇸

Transport Of Hospitalized Patients Via Helicopter

By LCDR James C. Dillon, MC, USNR,* and CAPT William M. Holls, III,
USMC;** From the Cardiopulmonary Section, Naval Hospital Camp
Lejeune, N.C., and Marine Air Group 26, Marine Corps Air Station,
New River, Jacksonville, N.C.

The Vietnam conflict has brought widespread public attention to the beneficial effects of helicopters and their role in saving lives. Many different organizations, from the Military Assistance to Safety and Traffic (MAST) program to the civilian volunteer fire departments, are applying Vietnam experience to stateside situations.

There are many differences between the situations encountered in Vietnam and those found in the United States. In many cases Vietnam experience is of little value in the area of interhospital transfer of patients.

Camp Lejeune is a large Marine Corps base located in eastern North Carolina. There are approximately

50,000 active duty personnel in the Camp Lejeune area with an equal number of dependents and retired personnel.

The Naval Hospital is a 450-bed institution that serves this local population and is fully equipped to manage cases requiring highly specialized medical care except for neurosurgery, vascular surgery and severe pediatric cardiopulmonary problems.

Because of the high number of accidents, older retired population, and newborns, it often becomes necessary to transport patients to other institutions for special care problems.

The two primary locations for receiving transferred patients are the Naval Hospital in Portsmouth, Va., and the National Naval Medical Center at Bethesda, Md. The distance involved is 140 nautical air miles to Portsmouth and 250 nautical air miles to Bethesda.

In order to efficiently transfer patients over these distances, we have employed Marine Air Group 26 (MAG-26) transport helicopters. The two types of helicopters utilized are the Boeing-Vertol CH-46 and

*LCDR Dillon was released from active duty in June 1972. His current address is: Indiana University, University Quarter, 1100 West Michigan Street, Indianapolis, Indiana 46202.

**Future plans for CAPT Holls, we are told, include medical school. We welcome this opportunity to wish him well.

The opinions expressed herein are those of the authors and cannot be construed as reflecting the views of the Navy Department or of the naval service at large.

the Sikorsky CH-53. Ordinarily the CH-46 is used on the shorter air evacuations to Portsmouth and the larger CH-53 is employed in the longer flights to Bethesda. These aircraft combine the helicopters' ability to operate from cleared areas adjacent to hospital facilities, with 110 to 150 nautical miles/hour patient transfer speeds, over direct routes, between the facilities. The use of military transport aircraft also allows for adequate internal space for proper patient care during the evacuation.

Methods

Camp Lejeune's air evacuation system works as follows. When the attending physician decides that a patient should be air evacuated, MAG-26 Operations at Marine Corps Air Station, New River, is notified of: the desired departure time, destination, nature of the patient's illness or injury, and the number of passengers who will accompany the patient. Provision for launches after working hours are made within MAG-26.

MAG-26 maintains two CH-46 aircraft on one hour and one-half hour standby, around the clock, for various contingencies including air evacuations. CH-53 aircraft are available during working hours on, approximately, a one-hour notice. After working hours no CH-53 is on designated standby. A certain lead time is required, therefore, to constitute a crew and prepare the aircraft for flight. In the patient-transfer role no difficulties have been encountered, however, since the time spent in patient preparation and administrative requirements at the naval hospital approximates the longest lead time required for a CH-53.

Based upon the request of the naval hospital, MAG-26 assigns either a CH-46 or CH-53 aircraft. Aircraft assignment is based primarily on the destination of the evacuation, and secondarily, on the requested departure time and aircraft availability. Presently, approximately 75 percent of our air evacuations are flown in CH-46's, with virtually 100 percent CH-46 utilization after working hours.

Simultaneously with the call to MAG-26, the hospital notifies the heart station in the hospital of the pending air evacuation. The heart station is responsible for furnishing two medical corpsmen qualified in cardiopulmonary care. All medical equipment that is carried on the air evacuation is maintained in the heart station (see Table I for the complete list of equipment). Additional support equipment is maintained at the hospital, such as electrical power equipment and communications devices, to provide centralized control.

Upon notification, the heart station moves the air evacuation equipment to the hospital ambulance entrance (Figure 1), where it is loaded aboard a vehicle for transportation to the hospital's helopad. The Camp Lejeune Base Fire Department supplies a fire truck for standby service at the helopad during the landing and takeoff of the aircraft.

Shortly before the scheduled arrival time of the helicopter the patient is placed on a padded stretcher and moved to the Emergency Room where the patient and medical attendants await the arrival of the helicopter. Except for infants, all patients sent on air evacuations are prepared with an indwelling venous catheter, in case medications are required.

Five minutes after the helicopter has arrived the patient is moved to the helopad in a standard ambulance. The five-minute delay provides adequate time for the heart station personnel to prepare the aircraft to receive the patient.

Figure 2 shows the aircraft configured for an adult patient. Note that the patient is placed with his head towards the front of the aircraft and on the right, or starboard side, of the aircraft. All oxygen and ventilation equipment, as well as the suction machine, is placed at the patient's head. Litter suspension straps can be used to hang bottles of intravenous solution. The heart monitor/defibrillator is placed under the patient's stretcher. The drug boxes, dressings, and additional intravenous fluids are placed directly opposite the patient, on the port wall of the aircraft, and on the cabin floor forward of the patient. Cargo tie-down straps supplied by MAG-26, and maintained with the hospital medical equipment, are used to secure all items within the aircraft.

Electrical power is provided by the helicopter's electrical system (400 cycle, 115 volt, 3 phase AC) through a frequency converter. Since the converter is new, an alternate and emergency back-up power source is provided in the form of a commercially-produced, gas-line-powered camp generator.

Communication between the aircraft crew and the medical team, and among the medical personnel aboard, is accomplished through a locally-produced intercom system incorporating standard items available in the military supply system. This unit is maintained with the hospital air evacuation equipment. Figures 3 and 4 describe the construction and use of the communication equipment, as well as the frequency converter, in greater detail.

In pediatric cases a transport Isolette (Air Shields) is placed on the stretcher or aircraft seat and operated from the frequency converter power source.

TABLE I — TABLE OF CONTENTS OF MOUNT-OUT BOXES

BOX I	BOX II (Con.)	BOX II (Con.)
DRAWER 1	DRAWER 1 (Con.)	DRAWER 5 (Con.)
2 Buretrols	Decadron, 5 amps	6 16 ga angiocaths
Flashlight with extra batteries	Dilantin, 4 amps	Butterfly I.V., 19ga, 21ga, 23ga,
No. 3, No. 2, No. 00 Trach tubes with cuffs	Dramamine, 30 tabs	5 of each
Monitor ground	Epinephrine, 25 amps	Bandage scissors
Redux	Isuprel, 6 amps	Alcohol sponges
	Levophed, 6 amps	
DRAWER 2	Lidocaine 4 x 50cc 1%	BOTTOM SPACE
Endo-trach tubes, 9.0 to 3.0 I.D.	Lidocaine 6 x 20cc 2%	Ambu bag and masks
with syringe and hemostat for cuff	Na Amytal, 4 amps	Ambu foot suction
Laryngoscope handle, large and small	Nembutal, 20cc	
Miller blades, No. 4 to No. 0	Neostigmine, 10 amps	
Trach adapter set	Valium, 10 amps	
Nasal airway, 34, 30, 26		BOX III
Oral airways, large to premie		Bird Mark 7 respirator
Tongue blades, 1 box		Adult Q circle
	DRAWER 2	IPPB manifold and tubing
	Aminophylline, 6 amps	Oxygen regulator, 50 PSI
	Benadryl, 3 vials	(National)
DRAWER 3	Bicarb, 10 amps	Oxygen regulator, flowmeter
2 Saftisets (I.V. administration)	Ca Glucoheptonate, 7 amps	(Oxequip)
5 I.V. extension tubes	Digoxin, 12 amps	I.V. solutions:
2 Convertable rebreather masks (Medicon)	Edecrin, 2 vials	D5W 1000cc x 2
2 Pediatric O2 masks	KCL, 6 amps	Ringers 1000cc x 4
	Lasix, 5 amps	Normal saline 2000cc x 2
DRAWER 4	Neosynephrine, 12 vials	D5W 250cc x 4
3 O2 connection tubing	Phenobarb, 5 amps	D5 1/3 saline 250cc x 2
2 O2 cannulas	Pressonex, 5 vials	D5 ½ saline 500cc x 1
5 O2 catheters, 10 Fr.	Procaine, 1 vial	Bicarb 5% 500cc x 1
5 O2 catheters, 14 Fr.	Regitine, 6 amps	Osmitol 20% 1000cc x 1
5 Suction catheters, 14 Fr.	Solu-Medrol, 6 amps	
3 N.G. tubing, 16 Fr.	Sterile water, 10 amps	7 Ear protectors
	Thorazine, 6 amps	3 Cargo straps
		2 O2 wrenches
DRAWER 5		Blood pressure cuff
5 50cc syringes	DRAWER 3	
10 10cc syringes	Dextrose inj., 2 amps	OTHER EQUIPMENT
15 5cc syringes	5 Sterile towels	Litter stanchions for CH-46
12 2cc syringes	15 4x4	Oxygen cylinder(s)
	1 pkg. 2x2	Air Shields Transport Isolette
BOTTOM SPACE		Portable electric suction (Phillips-
4 outlets, grounded extension cord	DRAWER 4	Drucker, MRdel 503C)
2 Blood recipient sets	Adhesive tape, ½", 1", 2",	Sears 1400 watt portable gasoline
Helicopter litter straps for 46 and	3", 2 of each	powered generator
53 helicopters	Paper tape, 1", 3", 2 of each	Bird goose neck compressor stand
	Ace wraps, 2", 3", 2 of each	Frequency converter and commu-
	Needles, 18ga to 26ga,	nication equipment
	10 of each	Heart monitor/defibrillator
BOX II		(Zenith Travenol Monopulse
DRAWER 1	DRAWER 5	807B)
Afrin, 1 bottle	Neo-polycin ointment	Narcotics are carried as needed
Atropine 3 x 20cc	5 22ga spinal needles	
Compazine, 8 amps		



Figure 1.—All of the Med Evac gear is shown on the hospital loading dock. Note the compactness and utmost utilization of containers.

Landing Zones and Helicopters

When operating from established landing fields, helicopters can be considered as fixed-wing aircraft. The helicopter is most effectively utilized, however, when operating from suitable cleared areas adjacent to its mission-working areas. To accomplish this and insure flight safety, the unit requesting the air evacuation should be aware of certain criteria to be considered in selecting a landing zone.

Though capable of vertical descents from several hundred feet, this type of approach is dangerous. For air evacuation the selected landing zone should allow the pilot to fly a straight-in descending approach, preferably made into the wind. The surroundings of the area selected should be clear of obstacles in order that the pilot may set up a glide slope (measured from the horizontal) of 30 degrees or less on his final approach and clear all obstacles. The clear-area dimensions of the zone should be no less than twice the length of the aircraft intended for use in the zone, measured in the direction of landing. The minimum lateral measurement should be equal to the length of the aircraft.

It is not absolutely necessary that all four quadrants around the landing zone be accessible to approaching

aircraft. Those landing zones, however, which allow only a single approach and departure lane are discouraged. The landing zone should not be too uneven, consistent with the ground clearances of the aircraft involved.

Extensive landing zone preparations, e.g. lighting and landscaping, should only be done after consulting with F.A.A. representatives and representatives of military agencies. In urban areas there may be various legal requirements involved in establishing a helopad for continuous use. Approaches over buildings, consistent with the glide slope requirements described above, although acceptable, may be discouraged on the basis of noise resulting from the aircraft approach.

Within the landing zone some type of marker should be placed to indicate the landing area. A block letter "H" within a triangle painted on the surface, or laid out in brick or tile of contrasting color, is a standard marking. For one-time use, a piece of colored cloth securely staked to the ground is sufficient. All these markings should be visible from 1000 feet and centered in the landing zone.

A helicopter produces considerable rotor downwash. Therefore the area of the helicopter landing zone should be clear of any objects which might be damaged by

high winds, and loose sand, dirt, or stones which could be hazardous for personnel and aircraft. To approximate the effect of a helicopter landing, consider up to 130 knot winds immediately below the aircraft and approximately 45 knots 100 feet away. These criteria should be applicable to any transport aircraft.

The average transport helicopter is crewed by two pilots and a crew chief. Before any personnel load aboard the aircraft it should be shut down to allow the pilot or crew chief to brief passengers on flight procedures and emergency exits. The pilot or crew chief is familiar with the use of available equipment in the aircraft and he will be better able to explain its use on the ground than in flight.

When loading or unloading, all vehicles should be kept well away from the aircraft. During landing or takeoff no personnel should be within 50 feet of the aircraft, or within the approach and departure lanes of the aircraft. If available, a fire truck that is equipped to handle gasoline fires should be on station. The "curiosity value" of a helicopter may arise and this should be taken into consideration in selecting a landing zone; a requirement for "spectator" control ought to be discussed with hospital security personnel.

The Boeing-Vertol CH-46 is a tandem-rotored transport helicopter powered by twin gas turbine engines, with cruise speeds up to 125 knots and an unrefueled range of approximately 225 nautical miles. Two different types of auxiliary fuel tanks are available which increase this range to 340 and 400 nautical miles, respectively. Use of internal tanks reduces the cabin space available for air evacuation personnel. At the minimum, the after ten and one-half feet of cabin are available.

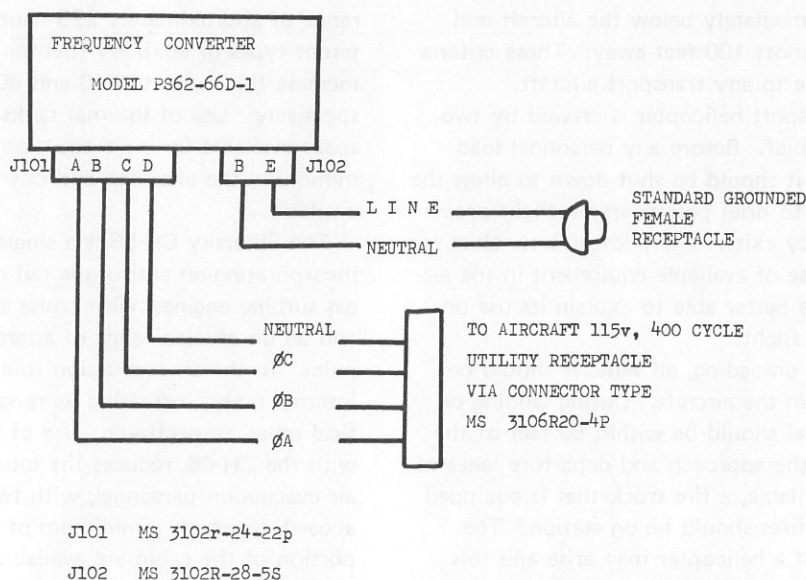
The Sikorsky CH-53 is a single main-rotored aircraft incorporating an antitorque tail rotor, powered by twin gas turbine engines, with cruise speeds up to 150 knots and an unrefueled range of approximately 300 nautical miles. In the air evacuation role it carries one or two internal tanks, increasing its range to 400 and 500 nautical miles, respectively. Use of the internal tanks, as with the CH-46, reduces the internal space available to air evacuation personnel; with two internal tanks aboard, however, a minimum of 15 feet of the after portion of the cabin are available because of the larger size of the aircraft.

Both aircraft utilize a rear-loading ramp which greatly simplifies the loading of air evacuation



Figure 2.—A completely configured CH-46 helicopter. This view is taken from the rear loading platform, looking forward. See text for detailed description.

POWER DISTRIBUTION



- A. FEMALE CONNECTOR REQUIRED FOR J101 IS TYPE MS 3108B-24-22S.
- B. MALE CONNECTOR REQUIRED FOR J102 IS TYPE MS 3108B-28-5P.
- C. LENGTHS OF CONNECTING LINES IS AS DESIRED. SIX FEET IS A MINIMUM.
- D. THE AIRCRAFT UTILITY RECEPTACLES ARE PROTECTED BY CIRCUIT BREAKERS RATED BELOW THOSE INCORPORATED ON THE FREQUENCY CONVERTER. THESE CIRCUIT BREAKERS MUST BE IN TO SUPPLY POWER TO THE CONVERTER.

Figure 3.—Plans and wiring data for the frequency converter.

equipment, and the patient. In the air evacuation role, only the aft right-hand litter tier is used with the litter placed in the center position for the CH-46, and in the second position from the cabin floor in the CH-53. This provides satisfactory height for convenient access to the patient, and particularly for closed-chest heart massage.

The utility receptacles used with the frequency converter and auxiliary communications kit, described in Figures 3 and 4, have the same plug connectors in both the CH-46 and CH-53 making the kit interchangeable with both aircraft. The utility receptacles are powered either with the rotors turning, or using a small turbine-driven auxiliary power plant incorporated in both aircraft.

Each aircraft has an internal heater and provisions for cabin lighting. Use of red cabin lights is preferred at night to avoid glare in the cockpit; white lights are available when required, however. Interior cabin temperature and cabin lighting can be adjusted by the pilot or crew chief as requested by the medical attendants.

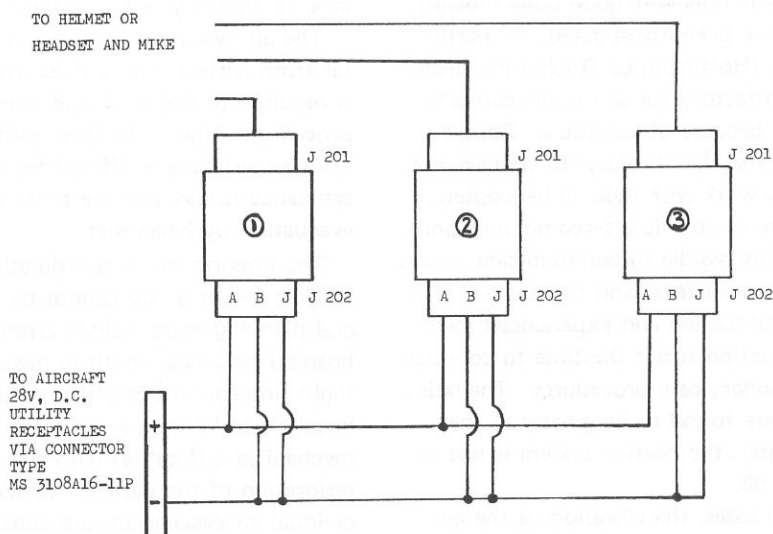
It is possible for members of the medical team to broadcast over the various communications radios in the aircraft. Through the use of a phone patch, or direct communication when appropriate ground equipment is available, the capability exists for the medical team leader to discuss the patient's situation directly with destination or en route medical facilities. This arrangement only requires a request to the pilot or crew chief and changeover of one communication cord. The available frequencies are:

FM	30.00 to 69.95 megacycles,
UHF	225.0 to 399.95 megacycles,
HF	2.000 to 29.999 megacycles (upper or lower sideband).

Discussion

Members of the hospital medical team should be acquainted with the environment of a helicopter in flight, prior to launching on an air evacuation. The vibration and noise factors on board are significant

INTERCOMMUNICATION EQUIPMENT
FOR MEDICAL PERSONNEL



- A. (1), (2), AND (3) ARE INTERGRATED INTERCOMMUNICATIONS AMPLIFIERS, PART NUMBER C-2646/A1C-14, FEDERAL STOCK NUMBER IRD-5831-050-8619-FANN
- B. THE LINES FROM (1) (2) AND (3) ARE CHORD ASSEMBLIES, PART NUMBER CX-4620/AR, FEDERAL STOCK NUMBER 5995-736-4574. THEY INCORPORATE A CONNECTOR WHICH MATES WITH J201 WITHOUT ADDITIONAL WIRING. EITHER A HELMET OR HEADSET WITH BOOM MIKE MAY BE USED. HEADSET IS PART NUMBER 173 B/AIC, FEDERAL STOCK NUMBER 5965-927-4074. MIKE IS PART NUMBER M96A, FSN. 5965-675-8797.
- C. CONNECTOR FOR J 202 IS FSN. 5935-761-4423

Figure 4.—Plans and technical information for the intercommunication system.

and even the most simple tasks, such as starting intravenous fluids or measuring blood pressure, are difficult to carry out.

It has been very obvious from the start that the patients who are air evacuated should be as clinically stable as possible. Even though the helicopter is well equipped, problems arise which will require good judgment and ingenuity once the aircraft is airborne.

Our goal is to transfer an acutely-ill *live* patient to a major treatment center. In transferring 64 patients over the last 18 months, only one patient has died while en route to another hospital. In retrospect, this patient had suffered a massive head injury, was clinically unstable, and probably should not have been transferred. During this same period of time, another head injury patient developed respiratory arrest ten minutes from touch down at Portsmouth Naval Hospital. Respiration was maintained successfully however, the patient survived and was subsequently discharged from the hospital. The latter patient had been stable

upon starting the air evacuation, but became unstable toward the end of the flight. The customary criteria for determining the clinical stability of the patient are: stable vital signs, airway maintained, all fractures either splinted or casted, all bleeding controlled, and as much freedom from pain as is possible.

We are convinced that the corpsmen who serve as attendants on the medical evacuation team should be seasoned personnel with proven excellence in cardiopulmonary resuscitation. These corpsmen should be working daily with very ill patients in the hospital, not originally well-trained but allowed to lie dormant in some dispensary, to be used only on Med Evacs.

A physician is not always sent, nor always required, on a medical evacuation. Two well-trained corpsmen can manage quite well. The decision as to whether or not an accompanying physician is needed, is properly resolved by the patient's attending physician, the Medical Officer-of-the-Day and/or the Air Evacuation Officer.

Blood pressure measurements continue to pose a problem, especially in the case of a small pulse pressure. Auscultation is impossible due to the noise level, and palpation is adequate only with good pulse pressure. Mechanical systems have been investigated. In particular, the Arteriosonde (Hoffmann-La Roche) has been tried and found unsatisfactory for use in helicopter air evacuations, primarily because of vibration. Doppler ultrasound flowmeters may be of value, but we have not had the opportunity to work with these in helicopters.

Without an adequate electronic intercommunications system, it is virtually impossible to communicate among the members of the medical team and flight crew. This situation requires a well-trained and experienced medical crew. An air evacuation is not the time to conduct training in cardiopulmonary-care procedures. The noise and vibration levels were found to be greater in the CH-46, and in the winter, the heating system is not as effective as in the CH-53.

In our neurosurgical cases, the vibration of the aircraft has caused no apparent harm. For newborn infants the control of temperature, even during the winter months, has posed no problem when the transport isolette is used. Artificial ventilation may prove troublesome with newborns, e.g. with hyaline membrane disease, but the use of a simple Ambu bag has been successful and we have the capability of using a Bourns respirator when the need should arise.

It is most important that all the equipment, from drugs to litter straps, be maintained at the hospital. This equipment is serviced by the air evacuation personnel at the hospital so that it can be in constant readiness and updated as required. The need for routine procedures and checks is paramount. Both the Air Station and the Hospital personnel are constantly changing, and if the system is to run smoothly and effectively, a definite procedural plan for both installations must be followed and understood.

We have not been forced to abort a medical evacuation either for mechanical or medical reasons. A contingency plan is available, thanks to the helicopter's versatility, and an understanding with various medical facilities along the evacuation routes.

Although we can in no way claim to have a M.A.S.T.-like program, we do not consider adequate the helicopters employed by M.A.S.T., because of their size or lack of multiengine (i.e. safety) capability.

The air evacuation system which we have outlined is far from perfect, but it does work. Constant attention is required to add or delete items of equipment and procedural details. In that spirit, this report of our prior experiences is offered for whatever benefit and assistance it may provide those concerned with medical evacuation by helicopter.

The importance of coordination between the hospital and the air group cannot be overemphasized. General planning must include arrangements for: training hospital personnel (both in hospital procedures and flight procedures), briefing of Group personnel, and hospitals to be used as en route stops in the event of mechanical difficulties with the aircraft or serious deterioration of the patient. Specific problems with individual air evacuations are considered on the basis of this general planning, through coordination between the hospital and air group prior to launching the aircraft. Each air evacuation's success ultimately depends upon the training and professional experience of the medical and flight personnel involved.

The geographic proximity of Camp Lejeune and New River, and the established organizational and administrative procedures of the two military facilities, facilitate our evacuations. These advantages may not be possible for other military and civilian agencies.

We value highly this working cooperation between the air group and hospital. While the arrangement is mutually satisfying, however, the greatest benefits are gained by the patients. And that is just how it should be!

Summary

Based on the last one and one-half years of experience at Camp Lejeune, the experience and appropriate comments are presented concerning the interhospital transfer of patients via helicopter. Application to other hospitals, both civilian and military, is discussed. ☘

THE GASTROENTEROLOGISTS' CORNER

Tumor-Associated Antigens In Gastrointestinal Disease

By LT Thomas J. Humphries, MC, USN, Gastroenterology Branch,
Internal Medicine Service, Naval Hospital, Philadelphia, Pa.

Since the early 1960's there has been increasing interest in the search for "tumor-specific" or "tumor-associated" antigens, in the hope that such substances might prove useful in the initial detection and recurrence surveillance of human neoplasms. The most progress has been made in the area of antigens or constituents normally found in the sera of fetal or embryonic tissues that reappear in neoplastic disease through some, as yet, unknown process.

As the human embryo develops, certain functions of the embryonic, totipotent cells that are no longer needed in the further differentiation into specific organ systems, are repressed. It is felt, however, that the cells so repressed maintain the capabilities of renewing embryonic functions if derepressed.

One theory that is currently in vogue to explain the reappearance of embryonic antigens in the adult, is that of antigenic reversion, or derepressive dedifferentiation,

whereby the totipotency of cells is unmasked in carcinogenesis.¹ Another theory is that the cell selected to develop into a carcinoma, has a small, undetectable amount of the antigenic substance on its surface that gradually becomes measurable by current methods as the malignant clone multiplies.² Below are listed some of the tumor-associated antigens currently under study.

Alpha₁-Fetoprotein: The subject of this presentation, this antigen is considered to be more or less diagnostic of primary hepatoma.

Carcinoembryonic Antigen: A glycoprotein with mobility in the beta globulin range that is normally present in fetal sera during the first two trimesters of gestation, this antigen has been found to be present in a high percentage of human adenocarcinomas arising from entodermally-derived digestive epithelium (esophagus, stomach, small bowel, colon, rectum, pancreas and liver).

Fetal Sulfoglycoprotein Antigen: A protein found in the gastric juice in a high percentage of gastric carcinomas. This antigen appears to become manifest before the development of histologic evidence of neoplasm.

The opinions expressed herein are those of the author and cannot be construed as reflecting the views of the Navy Department or of the naval service at large.

T-Globulin: An antibody to certain glycolipids found in gastrointestinal cancers.

Regan Isoenzyme: A placental alkaline phosphatase that is found in a percentage of digestive tract neoplasms. It may become useful in monitoring progression or regression of tumors and in identifying their malignant effusions.

Alpha₂H-Ferroprotein: An alpha₂ globulin of fetal hepatic origin that is not found in children over two months of age. This ferritin-like protein has been detected in children with various types of tumors (nephroblastoma, neuroblastoma, teratoma, hepatoma, lymphosarcoma, reticulum cell sarcoma, osteogenic sarcoma, and brain tumors).

Heterophile Fetal Antigen: A gamma globulin distinct from alpha₁-fetoprotein and carcinoembryonic antigen that is nonspecies-specific and is found in the sera of human, bovine, feline, canine and porcine solid tumors.

HISTORY

In 1944, while studying the fractionation of serum with ammonium sulfate, Pederson discovered a new alpha globulin in calf serum.³ This protein was found only in calves less than two weeks old, and was never found in adults. Its molecular weight was 50,000, and it carried a different sedimentation coefficient (3S) than is normally found (7S) in bovine serum. He named this new protein fetuin, from the Latin word, foetus.

In 1956, Bergstrand demonstrated a new protein in human fetal sera that was located between albumin and the alpha₁ globulins on paper electrophoresis. He proposed that this protein was the same "fetuin" discovered by Pederson.⁴

The next historical step was taken in 1963, when Abelev showed that an alpha globulin isolated from the sera of mice bearing transplantable, chemically-induced hepatomas, was immunologically identical to mouse fetuin.⁵

In 1966, Tatarinov proved immunologic identity between alpha₁-fetoprotein from human fetal serum, and a protein from the sera of adults with primary hepatoma.⁶

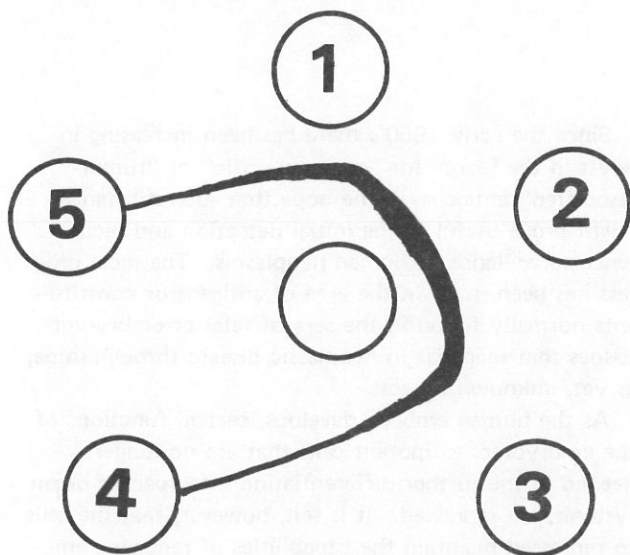
METHODS

Since 1966, the majority of studies have been directed towards attempts to: further delineate the properties of alpha₁-fetoprotein, develop more sensitive methods for its detection, discover the site of its production and its diagnostic significance in human

hepatoma and other neoplasms, and define the mechanisms involved.

The detection of human alpha₁-fetoprotein begins with the immunization of rabbits with pooled sera from 20 to 24-week-old human fetuses. After a period of weeks, an antiserum to human alpha₁-fetoprotein is obtained. This antiserum is then absorbed with pooled normal adult human sera to remove the antibodies precipitating other constituents in human serum. This absorbed antiserum is then used in one of several techniques to detect alpha₁-fetoprotein, namely: electrophoresis, immunofiltration, cellulose acetate electrophoresis, and double-gel diffusion (Ouchterlony Technique).⁷ Double-gel diffusion is the most simple and inexpensive to run, and is the method used in most clinical laboratories. Figure 1 illustrates the familiar reaction of identity that confirms the presence of alpha₁-fetoprotein. In this figure, the center well contains anti-alpha₁-fetoprotein antiserum, and wells 4 and 5 contain sera from healthy adults. Wells 1, 2, and 3 contain serum from a normal fetus, a patient with primary hepatoma, and a patient with embryonal cell carcinoma, respectively.⁸

The newest technique for alpha₁-fetoprotein detection is that of counterimmunoelectrophoresis. The



DOUBLE-GEL DIFFUSION REACTION OF IDENTITY

Figure 1

sensitivity of the test is greatly enhanced by this method. Whereas gel diffusion can detect 1 mg% of alpha₁-fetoprotein, counterimmunoelectrophoresis is said to detect 1/40 of this amount, or 0.025 mg%.⁹

OCCURRENCE AND INCIDENCE

Human alpha₁-fetoprotein is a globulin that migrates electrophoretically to a position between albumin and alpha₁ globulins, and has a molecular weight of 45,000 to 70,000 depending on the study cited.⁸

It is found in peak amounts in 14 to 24-week-old human fetuses, declining rapidly after that time, and disappearing completely at three weeks after birth.¹⁰ Rat and human tissue culture studies have shown that alpha₁-fetoprotein is produced almost exclusively in the liver.

The incidence of human alpha₁-fetoprotein as compiled from an extensive review of the literature is presented here in tabular form:

TABLE 1.—AFP* IN NORMAL HUMANS

1. Normal	0 of 3,368	0%
2. Normal Pregnant	0 of 104	0%

*AFP = Alpha₁-Fetoprotein

As shown in Table 1, alpha₁-fetoprotein hasn't been detected in 3,368 normal and 104 pregnant humans.

Table 2 reviews the incidence of alpha₁-fetoprotein in primary hepatoma. Please note the lower percentage of positives in cases from the U.S. as opposed to those from the Orient and Africa. The new counterimmunoelectrophoresis method of detection may increase the respective incidences by 20%.¹¹ Alpha₁-fetoprotein is rarely positive (2%) in patients with hepatic metastasis from various primaries. However, alpha₁-fetoprotein has been present in 100% of six patients, with carcinoma metastatic to the liver from a gastric primary, reported to date.^{12,13}

TABLE 2.—AFP IN PRIMARY HEPATOMA

Africa	358 of 550	65%
Orient	46 of 75	61%
USA	43 of 111	39%
Total	447 of 736	61%

Table 3 summarizes the incidence of alpha₁-fetoprotein in other types of liver disease. A positive alpha₁-fetoprotein in children under one year of age should be interpreted carefully — it is not diagnostic of primary hepatoma. In one adult case of Australia antigen-positive chronic active hepatitis, alpha₁-fetoprotein appeared for two weeks during steroid therapy. No details were given for the other case of adult hepatitis or the cases of cirrhosis.¹⁴

TABLE 3.—AFP IN OTHER LIVER DISEASE

Hepatitis (Ten Under One Year of Age)	12 of 357	3%
Laennec's Cirrhosis	5 of 328	2%
Fatty Metamorphosis	0 of 18	0%
Biliary Cirrhosis	0 of 32	0%

The incidence of alpha₁-fetoprotein in testicular carcinoma, the only other neoplasm with a consistently high percentage of positivity is reviewed in Table 4. No cases of seminoma that are alpha₁-fetoprotein positive have been reported.¹⁵

TABLE 4.—AFP IN TESTICULAR CARCINOMA

Teratocarcinoma	8 of 13	62%
Embryonal Cell	12 of 33	36%
Seminoma	0 of 20	0%

DISCUSSION

When are alpha₁-fetoprotein determinations clinically indicated? Carcinoma of the liver is not a major killer among cancers in the U.S. Certain areas of the world, such as Taiwan, Japan, and India are heavily afflicted with this disease. From 1959 to 1968 almost 4,000 cases of cancer were admitted to the Taiwan University Hospital. Of these, 19.5% were primary carcinoma of the liver.¹⁶ With the exception of the U.S. and Africa, the autopsy incidence of primary liver carcinoma has increased worldwide since 1961 as shown in Table 5.

The importance of the alpha₁-fetoprotein determination lies not in its use as a mass-screening technique for primary hepatoma or testicular neoplasms, but in the identification of a positive level in a person who is

TABLE 5.—AUTOPSY INCIDENCE OF
PRIMARY HEPATIC CARCINOMA

COUNTRY	% BEFORE 1961	% AFTER 1961
USA	0.26	0.21
Africa	1.6	1.3
S. America	0.41	0.83
England	0.13	0.57
Japan	2.2	2.4
India	2.3	3.1
Taiwan	1.9	5.5

suspected of having, or who has been proven to have one of these neoplasms. The importance of alpha₁-fetoprotein in such an instance (especially now that more sensitive tests are being designed) lies in monitoring the alpha₁-fetoprotein value quantitatively during and after definitive therapy.

Alpha₁-fetoprotein was followed by counterimmunoelectrophoresis in a series of five patients before and after total hepatectomy and liver transplantation (ages 4, 10, 16(2) and 44 years). In one patient, alpha₁-fetoprotein disappeared after transplant, and no signs or symptoms of recurrent disease had appeared after nine months. Persistent alpha₁-fetoprotein levels indicated the presence of slow-growing residual tumor in three cases. This was confirmed at autopsy. In the remaining case, an explosive recurrence of tumor was heralded by a sharp rise in a persistent alpha₁-fetoprotein level.¹⁷

At present, there are few studies that attempt to relate alpha₁-fetoprotein levels to tumor size, growth rate, liver function abnormality, or chemotherapy. At least one study failed to find a consistent decline in alpha₁-fetoprotein levels in response to various chemotherapeutic agents. An occasional case showed a decline in alpha₁-fetoprotein levels with cyclophosphamide therapy or intra-arterial methotrexate. The observed clinical improvement, however, did not always coincide with a decline in alpha₁-fetoprotein levels.⁷ Perhaps this indicates that our methods are insensitive, our hypotheses inaccurate, or that current chemotherapy is relatively ineffective in arresting the growth of hepatomas.

The association of alpha₁-fetoprotein with metastatic liver disease from primary gastric and pancreatic tumors is fascinating. If the high correlation in gastric carcinoma holds true, for instance, alpha₁-fetoprotein may be of help in determining initial and follow-up therapy, and

in following a patient after apparently successful operative treatment.

The purpose of the above review has been to present "state-of-the-art" of alpha₁-fetoprotein, in the hope that wider availability and use of the test will result. This is the only way that we can ascertain the value of alpha₁-fetoprotein and other tumor-associated antigens.

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Adenocarcinoma of the Major Intrahepatic Bile Ducts

REPORT OF A CASE

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INTRODUCTION

The differential diagnosis in cases of cholestatic jaundice continues to baffle surgeons and pathologists. In the absence of evidence of hepatitis, or toxic or alcoholic necrosis, the liver biopsy findings fail to differentiate between intra- and extrahepatic cholestasis except very late in the course of the disease, when ascending cholangitis and biliary hydrohepatosis develop.¹² In addition to the commonly encountered causes of extrahepatic biliary tract obstruction including choledocholithiasis, benign strictures,³ and neoplasia of the common bile duct, ampulla and pancreas, less frequently encountered conditions must be considered including sclerosing cholangitis,^{5,8,11,15,17}

chronic nonsuppurative cholangitis (primary biliary cirrhosis),^{2,9} and neoplastic involvement of the major bile ducts within the hepatic substance, particularly in the hilar area at the bifurcation of the hepatic duct.^{1,4,6,7,10,16,18} The purpose of this paper is to present a puzzling case which reemphasizes the problems encountered when dealing with the clinical entity of cholestatic jaundice.

CASE REPORT

This 49-year-old man suffered persistent jaundice, nausea and vomiting, pruritus, acholic stools and dark urine of five weeks' duration. Diarrhea was characterized by four to six greasy, foul-smelling stools per day. No history was elicited of possible hepatitis exposure, recent blood transfusions, excessive ethanol intake, or hepatotoxic drug use. The patient admitted to occasional mild substernal burning but denied fatty food intolerance. Following evaluation by his personal physician he underwent an exploratory laparotomy to rule out choledocholithiasis. At surgery gallstones

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The opinions expressed herein are those of the authors and cannot be construed as reflecting the views of the Navy Department or the naval service at large.

were not found. An intraoperative cholangiogram demonstrated patent bile ducts of decreased caliber but with no areas of focal obstruction. A liver biopsy taken at the time revealed evidence of "mild focal hepatitis." Following surgery the patient was referred to the Shands Teaching Hospital for further evaluation.

Physical examination of the patient on admission revealed a well developed, chronically ill Caucasian male with jaundice and scleral icterus. Abdominal examination was hampered by the induration of the healing right subcostal incision. The remainder of the physical examination was noncontributory.

Laboratory evaluation on admission disclosed an hematocrit of 44 volumes %, a white blood cell count of 15,000/cu mm and a prolonged prothrombin time which responded rapidly to Vitamin K. Serum electrolytes were normal. Liver function studies included: an alkaline phosphatase of 40 King-Armstrong units; lactic dehydrogenase, 80 units; serum glutamic oxalic transaminase, 50 units/ml; serum glutamic pyruvic transaminase, 34 units/ml; total bilirubin, 12.5 mg% (8.9 mg% direct); and total serum proteins, 8.4 gm% with 3.9 gm% albumin. The blood urea nitrogen was 22 mg% and the fasting blood glucose was 132 mg%. X-ray examinations of the chest and abdomen disclosed no remarkable findings except for a pneumoperitoneum resulting from previous surgery. The differential diagnosis at this point included sclerosing cholangitis and carcinoma of the major hepatic ducts. Several attempts at transhepatic cholangiography proved unrewarding and the patient subsequently underwent exploratory laparotomy.

At operation extensive scarring was noted in the area of previous surgery. The bile ducts could not be identified. No masses were palpated in the area of the ducts or in the hilum of the liver. An operative cholangiogram via the gallbladder confirmed the small caliber of the extrahepatic biliary ducts, but contrast media flowed freely into the duodenum. No retrograde filling beyond the junction of the cystic and hepatic ducts was seen. A liver biopsy was reported to reveal "chronic pericholangitis, centrolobular cholestasis, periportal fibrosis and bile duct sclerosis consistent with sclerosing cholangitis." Corticosteroid treatment was initiated. Following three 100-mg doses of hydrocortisone given intramuscularly, the patient experienced upper gastrointestinal bleeding which failed to respond to conservative therapy; a second laparotomy was performed one week later. At this time two small bleeding ulcers were found in the fundus of the stomach. These were oversewn and the patient appeared to do well for the next three days. At this time, however, he again presented severe upper

gastrointestinal bleeding which necessitated reoperation and a subsequent 80 percent gastrectomy. A tracheostomy was also performed. Following these complications repeat liver function studies indicated moderate improvement with alkaline phosphatase of 15-20 King-Armstrong units, and total bilirubin of 9 mg%. The improvement was only transient, however. The patient became intermittently febrile and developed wound dehiscence, generalized peritonitis, septicemia due to *Bacteroides melaninogenicus*, and pneumonia. His condition rapidly deteriorated and he died in cardiac arrest despite resuscitative efforts.

NECROPSY FINDINGS

The body was that of a well developed, chronically ill, White man. Jaundice and scleral icterus were prominent. From a level just below the xiphoid process, a wound dehiscence extended laterally along the subcostal margin bilaterally to the midclavicular line with exposure of abdominal contents. Aside from severe bilateral consolidating pneumonitis, the major findings were limited to the abdomen.

Extensive fibrinopurulent adhesions and generalized peritonitis were present. Well-healed suture lines were noted in the adventitia of the remaining portion of the stomach. Multiple superficial mucosal ulcers were found in the gastric mucosa. The suture line of the duodenal blind loop was disrupted but covered with extensive overlying adhesions. The liver weighed 3200 grams, was uniformly bile-stained, and showed prominent capsular fibrosis. Except for adhesions and peritonitis, the gallbladder and extrahepatic biliary tree were unremarkable. A segmental 0.7-cm-long, circumferential stricture at the origin of the common hepatic duct was identified by carefully sectioning through the hilum of the liver. The lumen of the duct was 0.1 cm in diameter at this point (Figure 1). The proximal intrahepatic bile ducts were moderately dilated.

Histologic changes in the liver consisted of a predominantly centrilobular bile stasis, and minimal focal limiting-plate hepatocellular necrosis. The common hepatic duct stricture was caused by a sclerosing well-differentiated adenocarcinoma. The tumor replaced the full thickness of the bile duct wall and showed early parenchymal invasion at the periphery (Figure 2). Perineural invasion was present (Figure 3).

DISCUSSION

Diagnosing the cause of cholestatic jaundice in the absence of any evidence of ongoing hepatocellular necrosis and/or hepatitis can present a difficult problem.



Figure 1.—Section from major bile duct just proximal to the porta hepatis. The bile duct wall is greatly thickened and the lumen narrowed by a well-differentiated adenocarcinoma. (Hematoxylin-eosin, X 15).

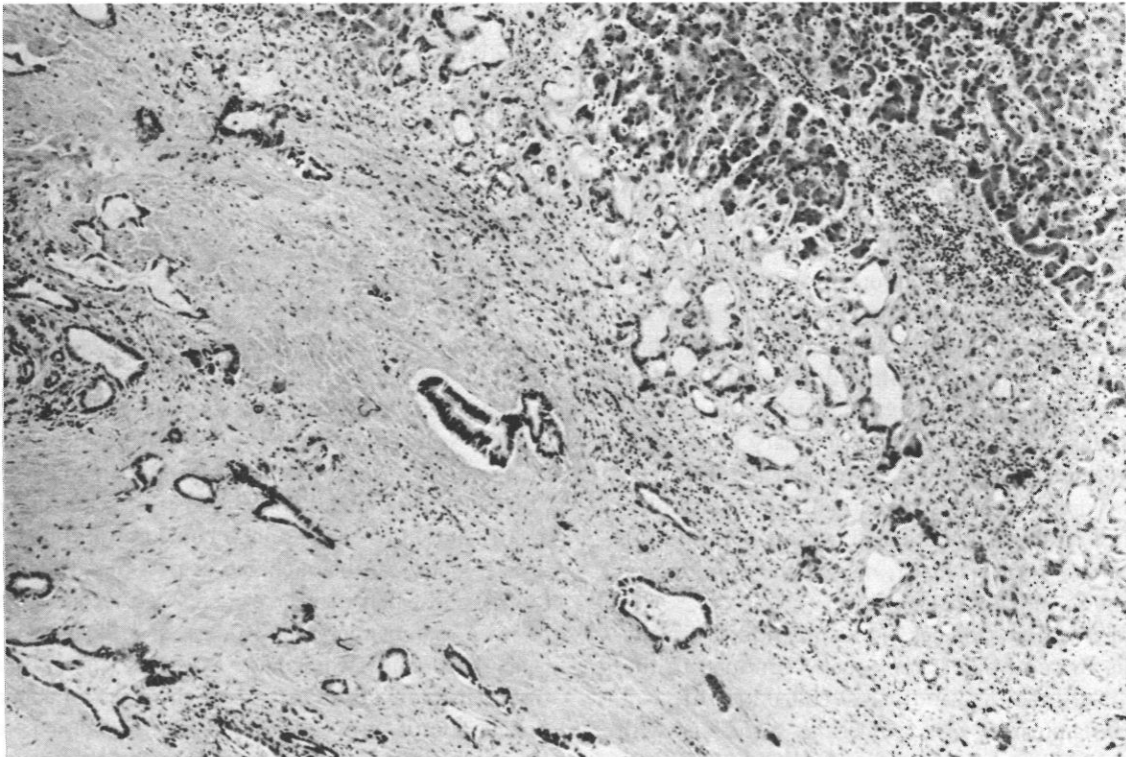


Figure 2.—Maximum extent of invasion is illustrated in this section which demonstrates superficial invasion of adjacent liver parenchymal cells by the carcinoma. (Hematoxylin-eosin, X 160).

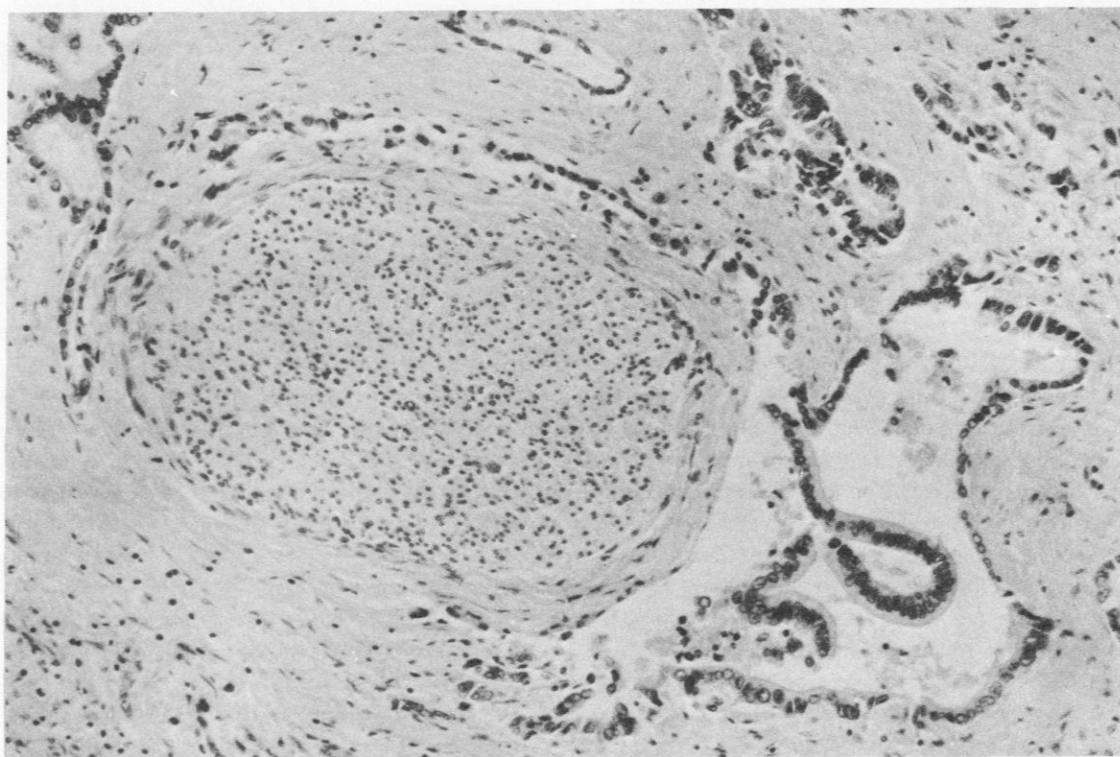


Figure 3.—Perineural invasion by well-differentiated adenocarcinoma. (Hematoxylin-eosin. X 375).

Aside from the more common causes of extrahepatic obstruction, i.e. choledocholithiasis, major bile duct and ampullary tumors, and strictures of the bile ducts following surgery, additional diagnoses to be entertained include: sclerosing cholangitis,^{5,8,11,15,17} chronic nonsuppurative cholangitis (early primary biliary cirrhosis),^{2,9,13,14} and bile duct carcinoma in the area of the porta hepatis.

The terms chronic nonsuppurative cholangitis, intrahepatic cholangiolitic hepatitis, and primary biliary cirrhosis are used to designate the clinical entity characterized by moderate to profound jaundice with laboratory findings suggesting extrahepatic obstruction and pathologic changes indicating primary injury of the interlobular bile ducts.^{13,14} Clinically, the disease is one of insidious onset associated with acholic stools, weight loss and severe pruritus that frequently heralds the onset of jaundice. Fever, nausea and vomiting, and chills may be variably present.

The microscopic findings in examination of liver biopsies are those of bile stasis, usually confined to the smaller biliary radicals, and portal collections of chronic inflammatory cells, sometimes associated with bile duct obliteration. Necrosis and destruction of the interlobular ducts occur frequently and are said to be pathognomonic of the disease. Occasional small foci

of hydropic degeneration of the hepatocytes may be noted in the area of the limiting plate, although diffuse hepatocellular destruction is absent.^{2,13,14} Definite diagnosis usually requires exclusion of extrahepatic obstruction by surgical exploration. No specific treatment is known, but there is some evidence that choledochostomy and systemic corticosteroids are beneficial in the relief of the jaundice and in the resolution of the morphologic liver changes.⁹

Another entity to be considered when appraising the problem of jaundice with laboratory evidence of extrahepatic obstruction is that of primary sclerosing cholangitis. That this exists as a separate entity is disputed by some who maintain it is a manifestation of systemic disease.^{15,17} Its clinical presentation is similar to that previously described. The diagnosis of sclerosing cholangitis should be made only when surgical injury or drug toxicity can be excluded as possible etiologic agents, and when there is evidence, either at operation or from roentgenographic studies, of a localized or generalized stenosis involving the extrahepatic biliary tree. Histologic examination of the questionable areas of bile duct is necessary to confirm the presence of a fibrotic process and to demonstrate the absence of malignancy.⁵ The incidence of diseases such as ulcerative colitis, retroperitoneal fibrosis, and pancreatitis in a

recently reported series of patients with sclerosing cholangitis is particularly striking, and their presence is viewed by some as presumptive evidence to support the diagnosis of sclerosing cholangitis.^{15,17}

Methods of treating sclerosing cholangitis are controversial. Biliary drainage above the level of obstruction followed by systemic corticosteroid therapy is advocated by some.¹⁷ Others doubt the efficacy of this therapy, maintaining that patients who respond to this regimen probably, in fact, have chronic nonsuppurative cholangitis.¹¹

A third and again, uncommon, disease is adenocarcinoma of the major bile ducts within the hepatic substance. Laboratory and clinical aspects are essentially the same as those described for the preceding entities. Pain is variably present.^{6,18} This tumor most frequently involves the major intrahepatic bile ducts at, or near, their junction with the hepatic duct. Histologically, it is more commonly a well-differentiated adenocarcinoma of the ductular type and only infrequently invades the liver substance. The sclerosing ductular carcinoma is quite frequently circumferential and small, but may attain significant size (up to 7 cm in diameter).^{6,7,16} When the tumors are small and occur within the hilum of the liver, they are not obvious to the surgeon and may be easily missed at exploration. Only meticulous operative cholangiography may reveal them. The typical operative findings, small or collapsed extrahepatic bile ducts, should alert the surgeon to the possibility of this neoplasm.

Distinguishing these tumor patients from those who present the previously described diseases is of more than academic interest, because the treatment is considerably different. The diagnosis requires histologic confirmation in order to rule out the possibility of a localized form of sclerosing cholangitis.^{6,10} Microscopic diagnosis, especially at frozen section, may prove difficult. The many small bile radicals normally draining directly into the larger bile ducts are not easily distinguished from the tubular structures of an adenocarcinoma within the wall of the bile duct. The most helpful finding is, of course, the demonstration of tumor invading the perineural sheaths.


Insufficient numbers of cases have been reported to adequately evaluate preferred modes of therapy. Preliminary reports, however, suggest that any procedure resulting in reestablished bile flow, such as intrahepatic cholangiojejunostomy or bile diversion via T-tubes, may offer significant clinical improvement and may be consistent with survivals of five years or longer.^{1,16,18} Since these tumors metastasize late in their natural history,^{6,10} these efforts are justifiable, particularly in view of the rapid deterioration which characteristically

occurs with prolonged bile stasis and resultant hepatocellular damage.¹⁰

SUMMARY

A case of adenocarcinoma of the major intrahepatic bile ducts is presented with a discussion of the less frequently encountered causes of cholestatic jaundice.

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To the Editor: I would appreciate very much your identifying the two medical officers on the cover photograph of the June, 1972 issue of U.S. NAVY MEDICINE, which was the CIP/RDT&E issue. Someone has very kindly forwarded me an issue. I would like to know how I can get a copy of this original photograph. In any case, I would like to hear from you and obtain identification of the two doctors pictured. Many thanks.

CDR Robert P. Majors, Jr., MC, USNR
Raleigh Ear, Nose & Throat Associates, Inc.
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After checking it out we have identified the physician on the left as LCDR Douglas W. Peterson, MC, USN. LCDR Serge A. Martinez, MC, USNR is on the right. Both physicians are attached to the Department of Otolaryngology at Naval Hospital, NNMHC, Bethesda, Md., where the photograph was taken.

We hope you have received your copy of this photo which was mailed on 9 Aug.

To the Editor: In the July issue of U.S. NAVY MEDICINE you give a biographical sketch on CAPT George D. Selfridge relative to his selection to flag rank. In this sketch you describe him as being a *member* of the American College of Dentists.

Doubtless this error in designation slipped by your proofreader. For your information, however, he should have been designated as a *Fellow* of the American College of Dentists.

True, one pays dues, but it is an elected honor.

CAPT Horton D. Kimball, DC, USNR (Ret.),
DDS; DDSc; FACD; FACP; Diplomate, American
Board of Prosthodontics; 857 Montclair Rd., S.W.,
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Right on, Captain! I'd give my whole box of blue pencils for one good proofreader. What we have leaves something to be desired. We'll try to check more on the rascal — our writer too.

To the Editor: Congratulations on your excellent journal. My wife (LT Mary C. Wheeler, NC, USNR-R) and I enjoy it for its professional and informational content.

With the American Health Congress upon us, I am reminded of an item which needs dissemination to the field. This conference, like many, will have many attendees — both military and civilian — and a limited amount of hotel-space availability. Other conferences held by the American Hospital Association have registration limitations. It is noted that governmental employees are required to secure proper funding authorization prior to attendance at these conferences. By the time this procedure is accomplished, many of the hotel space and/or registration lists are filled.

In the future, if it is at all possible, I would suggest that hotel and conference registrations be made *at the time that funding is requested* (i.e. the decision is made

(Continued on p. 39)

ABSTRACTS



AND REVIEWS

Diseases of the Newborn, by A.J. Schaffer, M.D. and M.E. Avery, M.D., with collaboration of M. Markowitz, M.D. and L. Finberg, M.D. 3rd ed., 919 pp, illus., Philadelphia, W.B. Saunders Co., 1971.

As Dr. Schaffer states in his preface, Neonatology has become an accredited pediatric subspecialty. An information deluge has intervened since the 2nd edition of 1965.

The basic organization of the book has not changed. It is organized around body systems, as in any complete textbook of medicine, because Neonatology is the only pediatric subspecialty encompassing the entire patient. The appendices have been expanded from 4 to 5, the new addition consisting of normal values, equivalency charts and milk/formula composition tables.

Most, but not all subjects within the chapters have been rearranged and expanded in proportion to recently acquired information. For example, retrolental fibroplasia is now discussed more appropriately under "Disorders of the Eye," rather than under "Variations in Length of Gestation." However, no new references are included even though much has been learned regarding the susceptibility of the eye to levels of oxygen previously thought to be safe. Checking the skin color and/or keeping below 30% oxygen are the only areas of monitoring which are mentioned. In 30% oxygen, some infants present a pO_2 above 100, whereas other infants are pink at pO_2 of 40 mm or less. Arterial gas monitoring is not mentioned despite the basic current recommendations of the American Academy of Pediatrics. Other areas have been appropriately enlarged such as "Rubella" with its expanded syndrome and four new

references. References for hyaline membrane disease have increased from 30 to 41, 16 of which have been published since 1965.

Some annoying typographical errors are noted in Appendix V. A number of contradictions are present also. Normal blood sugar values under Appendix V do not agree with those listed in the body of the text. In the drug table it is stipulated that no additional Vitamin E is needed, but on page 714 it indicates that pre-matures with hemolytic anemia need 75-100 I.U. daily.

Information is incomplete on drug warnings in Appendix V. Two examples include ethacrynic acid and dilantin, listed as presenting no hazard; ototoxicity is well known for the first. Neither is the impossibility of detecting early clinical dilantin toxicity (ataxia and nystagmus) mentioned.

Faced with the gigantic task of keeping a textbook current and accurate in a rapidly developing field, Drs. Schaffer and Avery have done a creditable job, but not a superb job. The book's usefulness is probably limited to medical students and pediatric residents.

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Regulation of Fluid and Electrolyte Balance: A Programmed Instruction in Physiology for Nurses, by Gretchen Mayo Reed and Vincent F. Sheppard, 317 pp, \$5.50, Philadelphia, W.B. Saunders Co., 1971.

This is the first edition of a programmed instruction aimed at providing "a self-teaching aid for the study of fluid and electrolyte balances, the mechanisms which the human body utilizes in maintaining its 'internal environment'." Beginning with discussion of the basic physiology of fluids and electrolytes, the instruction proceeds to more specific consideration of mechanisms and systems involved, and finally to practical application of principles to clinical situations. The clinical applications are of interest to the general ward nurse as well as to those working in such specialized areas as coronary care, kidney dialysis, and pediatrics.

The text is well planned. Each small item introducing a new topic is followed by multiple choice and/or fill-in questions. The correct answer follows immediately below the question.

The authors fulfill their intention to design an instruction "as uncomplicated as the matter itself will permit, while including a comprehensiveness of detail consistent with a strictly clinical orientation." However, I felt some areas could have been more detailed, especially those dealing with treatment of fluid and electrolyte imbalances secondary to various clinical situations. I question the authors' use of the term

"oral insulin preparations" in reference to oral medications frequently used in treating maturity-onset diabetes.

The book is a very good supplementary or even basic text for the student nurse and is an excellent review for the graduate nurse. It is a useful reference for nurses in all areas of the hospital, in many clinical situations and in conducting ward classes for corpsmen.

ENS Margaret L. Fitzgerald, NC, USNR
Naval Hospital, NNMCMC, Bethesda, Md.

Current Pediatric Therapy - 5, ed. by S.S. Gellis, M.D. and B.M. Kagan, M.D. 785 pp, \$25.00, Philadelphia, W.B. Saunders Co., 1971.

This book represents a commendable gathering of 274 well known physicians and scientists, each producing the most current thoughts and therapy in his, or her, particular field of pediatric interest. Drs. Gellis and Kagan use a format which combines certain aspects of both a textbook and an outline. Chapters are divided into subchapters, organized by systems, permitting the reader to easily locate the therapy for common, and not-so-common problems that may enter the office.

Each disease entity is accompanied by a brief description, followed by the usual therapy and results from therapy. The ratio between space allotted to description and to therapy of a given disease varies with the individual author writing that section. For example, the section on glomerulonephritis contains only a minute description of the disease, whereas, more than half of the section on allergic gastrointestinal disease is concerned with a description of the condition itself. The book generally emphasizes therapy, however, and the more treatable diseases receive greater consideration in this area.

This book offers the practicing physician up-to-date therapy for almost all diseases that he may encounter in treating children. Through this contact with recognized authorities in each of the subspecialties of Pediatrics, the reader obtains the soundest opinion available in that particular field. Doctors Gellis and Kagan manage to bring together a vast and useful compendium of pediatric therapy.

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The Respiratory Muscles, Mechanics and Neural Control, by E.J.M. Campbell, E. Agostoni and J.N. Davis. 2nd ed., Philadelphia and London, W.B. Saunders Co., 1970.

This is an up-to-date revision of a monograph written by Dr. Campbell in 1958. Over the ensuing years, the mechanics of the chest wall and the neural control of the respiratory muscles have become topics of much interest and research. This second edition is a more comprehensive overview of the respiratory movements of the chest and the mechanics of breathing.

The material is presented in a clear and concise fashion by three experts. The sections on the mechanics of respiration (by Dr. Agostoni) and muscle physiology, excellently written, are easy to read. The sections (by Doctors Campbell and Davis) pertaining to the clinical assessment of pulmonary function in neuromuscular diseases comprise only a small part of the book, and cover this aspect in a brief and superficial manner.

This is an excellent reference book for the subspecialists in pulmonary diseases, physical medicine, anesthesia or neurology, who seek a lucid explanation of the mechanics and neural control of breathing. It is not a text written for the general practitioner or internist who desires an in-depth review of the diagnosis and management of the pulmonary manifestations of neuromuscular disease.

CDR Robert C. Elliott, MC, USN
Head, Pulmonary Disease Branch,
Naval Hospital, NNMCMC, Bethesda, Md.

Complimentary copies of books received by the Professional Publications Office in BUMED are selected for review on a voluntary basis. Interesting reports submitted by the reviewers appear in this column.

The opinions expressed are those of the reviewers and do not represent an official position of the Navy Department or the naval service at large. Please do not send advertisements or promotional leaflets for books to U.S. NAVY MEDICINE. We do not advertise, nor can we guarantee that a complimentary book will be chosen for review by a qualified reader.



VOLUNTEER-EDUCATIONAL PROGRAMS EMPHASIZED BY CNO

A recent letter from the office of the Chief of Naval Operations stressed the need for promoting educational opportunities for military personnel throughout the Navy, as we face the new conditions of the All-Volunteer force concept wherein we must explore every possible incentive for the recruitment and retention of quality Navy personnel. The following paragraphs have been taken directly from that letter and merit reiteration here.

The Navy has traditionally supported and encouraged off-duty and on-duty educational opportunities through such programs as Tuition Aid, Program for Afloat College Education (PACE), USAFI courses and Instructor Hire programs. Current significant developments in the civilian educational community are giving encouragement to this endeavor of promoting career pursuit of educational development by Navy people during their free time. These developments are:

- a. An increasing number of schools are reducing residency requirements and granting resident credit for courses conducted off-campus.

- b. More liberal acceptance by American colleges and universities of credit for non-traditional education experiences such as the examinations of the College Level Examination Program (CLEP), USAFI college level courses, formal service school courses, PACE courses and the challenge method (placement and end-of-course examinations).

- c. The "university without walls" concept now being sponsored by a limited number of universities gives promise of being a breakthrough for mobile students such as Navy people seeking credit toward a degree.

Representatives of the Navy Department have been in contact with universities which either have "university without walls" programs or contemplate the establishment of such programs which give college level credit (and award accredited degrees) without insistence on traditional residency restrictions. The Navy will encourage, as feasible, the availability of these opportunities for Navy people on a wider basis. To this end liaison will be maintained with cooperating institutions in order to promote establishment of programs in areas of Navy concentration.

While efforts as described above will be emphasized at the national level, it is evident that the success of increased emphasis on educational opportunities will be largely dependent upon the initiative and perseverance of the leaders in local commands. Accordingly, each command is strongly encouraged to take steps designed to assess the educational needs and interest of its personnel, expand on-going programs, initiate new programs by inviting local accredited schools to provide on-base courses and to assure that all personnel are advised of and encouraged to profit from educational opportunities available locally.

An important facet of this educational emphasis should be consultation and negotiation with local educational authorities in order to ascertain (and to encourage expansion of) the granting of degree credit for non-traditional experience, for service courses, for courses taken in other institutions and for examinations such as the CLEP. Most satisfactory results from these consultations can be expected if they are conducted by the highest echelons of the local Navy commands with the highest possible levels of academic authorities in the local community. Such contacts are strongly encouraged.

Once the opportunities have been ascertained, analyzed and categorized, a positive program of dissemination of information is imperative. This effort should not be limited to publicizing the information, but should encompass a positive program of contact with individuals to ascertain their areas of interest and to encourage their participation in programs which will profit them most.

It is recognized that this effort will be costly in time and effort since it must be accomplished within available resources. However, the return on the investment can be highly gratifying in terms of retention and improved people management. Accordingly, personal attention to this matter by top command echelons is encouraged with the assistance of one or more educational advisory officers to collate details, to counsel Navy personnel and to effect innovative procedures to promote the provision and acceptance of educational opportunities.

Areas that should receive particular attention in this effort are:

- a. Negotiations with school/college authorities designed to reduce administrative barriers such as residency requirements and credit transfer procedures.
- b. Receipt of maximum credit for educational experience in the Navy, CLEP, and other educational experiences or examinations.
- c. Receipt of credit for courses taken in other institutions and particularly for courses taken in "university without walls" programs.
- d. Provision for academic counseling by civilian educational authorities and the provision of courses at times and locations convenient for Navy people.
- e. Promoting the design of curricula/programs that fulfill the Navy member's need for achieving his educational goal, such as preparation for increased responsibility within the service, personal enrichment and a civilian career when he retires. 🍀

RESIDENCY TRAINING IN THERAPEUTIC RADIOLOGY

During a recent site inspection by the American Board of Radiology, provisional approval was granted to Naval Hospital, San Diego, Calif., for training of one candidate at each year level in Therapeutic Radiology. The course of training is of three years' duration, and will prepare selectees for Board Certification in Therapeutic Radiology.

Applicants are now being considered by the Bureau of Medicine and Surgery. Active duty Navy medical

officers should submit official request to the Chief, Bureau of Medicine and Surgery (Code 316), via the chain of command, in accordance with BUMEDINST 1520.10 series. 🍀

FROM THE DETAILER'S DESK

MEDICAL OFFICER BILLETS

(Don't say you never heard!)

In the summer of 1973, it is anticipated that a number of interesting and challenging medical officer billets will become available in the following categories:

- A. Staff jobs
- B. Overseas hospitals
- C. Overseas dispensaries
- D. Ships.

Interested and qualified medical officers are invited to address their inquiries to Code 317, Bureau of Medicine and Surgery, Navy Department, Washington, D.C. 20390.

A. STAFF JOBS

1. CO, U.S. Naval Hospital, Guam
2. CO, U.S. Naval Hospital, Subic Bay
3. CO, U.S. Naval Hospital, Taipei
4. CINCUSNAVEUR London
5. Force Medical Officer, COMSUBPAC, Hawaii
6. Senior Medical Officer, MCB, Camp Butler, Okinawa
7. Fleet Medical Officer, COM SIXTH Fleet
8. Division Surgeon, THIRD Marine Division
9. Medical Officer, NADGR USMACV, RVN
10. District Medical Officer, NAVSUPACT, Canal Zone
11. Medical Officer, NAS, Agana, Guam
12. Officer in Charge, ENPVNTMEDU 6, Pearl Harbor
13. Officer in Charge, ENPVNTMEDU 7, Naples
14. Assistant Force Medical Officer, HQ, FMFPAC
15. Senior Medical Officer, NAS, Bermuda.

Other positions which may be available in the next 18 months are:

1. Division Surgeon, Camp Pendleton, Calif.
2. Division Surgeon, Camp Lejeune, N.C.
3. Force Troops, FMF Surgeons
4. Staff Surgeon positions on both coasts.

B. OVERSEAS NAVAL HOSPITALS

SPECIALTY	GUAM	GTMO	NAPLES	ROOS RDS	ROTA	SUBIC BAY	TAIPEI	YOKOSUKA
ANESTH	X	X		X		X		X
DERM	X							
ENT	X	X					X	X
MED	X		X		X	X	X	X
NEUROL	X							X
NEUR PSYCH	X	X	X			X		
NEUROSURG	X							X
OB/GYN	X			X	X	X	X	X
OPHTHAL	X		X					
ORTHOPED	X		X	X		X	X	X
PATH	X			X				X
PEDIATRIC	X			X	X	X		X
RADIOL								X
SURGERY	X	X			X	X		X
UROLOGY	X							X
GMO	X	X	X	X	X	X	X	X

C. OVERSEAS DISPENSARIES

1. Antarctic
2. Alaska
3. Bermuda
4. Canal Zone
5. Greece
6. Guam
7. Hawaii
8. Iceland
9. Italy
10. Japan
11. Midway
12. Morocco
13. Newfoundland
14. Okinawa
15. Philippines
16. Puerto Rico
17. Sicily
18. United Kingdom.

In addition there will be medical officer billets available in both the Cairo and Taiwan Medical Research Units.

D. SHIPS

1. Aircraft carriers
2. Cruisers

D. SHIPS (Con.)

3. Frigates
4. Tenders
5. Support ships
6. Amphibious Ships.

HOSPITAL SHIP DUTY

The assignment section of BUMED anticipates the need, in the not too distant future, to staff a hospital ship which will be homeported in the Mediterranean Area. Requirements for individuals in the following specialties are expected:

<i>Anesthesia</i>	<i>Pediatrics</i>
<i>ENT-Ophthalmology</i>	<i>OB-GYN</i>
<i>Internal Medicine</i>	<i>Neurosurgery</i>
<i>Pathology</i>	<i>General Surgery</i>
<i>Psychiatry</i>	
<i>General Medical Officers</i>	<i>Radiology.</i>

At this time we are seeking volunteers for these positions. This is a 30-month accompanied and 18-month unaccompanied tour. If you are interested, please notify the Bureau of Medicine and Surgery of your desire, Attn: Code 317.

DUAL COMP WAIVER

The Civil Service Commission has recently granted a waiver of the Dual Compensation Law which previously precluded the active recruitment of retired military physicians to fill selected medical billets. The present waiver is limited to that of permitting the utilization of retired medical officers at various Armed Forces Entrance and Examining Stations (AFEES). We are, therefore, actively seeking applicants for these positions, and are using this as well as other methods, to disseminate information regarding these new job opportunities. (See list on the right.)

Additionally, there is a tentative plan under consideration to hire civilian physicians at many of our smaller Navy dispensaries. It is anticipated that waivers of the Dual Compensation Law can also be obtained in these individual cases, thus permitting the hiring and utilization of retired military physicians at facilities other than the Armed Forces Entrance and Examining Stations. It is anticipated that a GS-13/14 rating will be utilized, with an annual salary of \$23,000 to \$25,000, and additional compensation for shift rotations where necessary at particular activities.

Your comments as to whether or not you would personally be interested in this type of employment

Locations of AFEES

1. Boston, Mass.
 2. New York, N.Y.
 3. Charlotte, N.C.
 4. Fort Jackson, S.C.
 5. Cleveland, Ohio
 6. Chicago, Ill.
 7. Milwaukee, Wisc.
 8. St. Louis, Mo.
 9. Kansas City, Mo.
 10. Dallas, Tex.
 11. Houston, Tex.
 12. New Orleans, La.
 13. Oklahoma City, Okla.
 14. Oakland, Calif.
 15. Seattle, Wash.
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are invited. Any other comments which you would like to make in this area would also be appreciated.

Please address your replies to the Chief, Bureau of Medicine and Surgery (Attention: Code 317), Navy Department, Washington, D.C. 20390. ☎

SURGEON GENERAL LAUDED BY PRESIDENT

VADM George M. Davis, MC, USN, Surgeon General of the Navy, was awarded the Distinguished Service Medal by the President of the United States, for his "exceptionally meritorious service to the Government of the United States in a duty of great responsibility."

The medal, which is the third highest award that can be given by the United States, was presented to Admiral Davis by the Honorable John W. Warner, Secretary of the Navy.

Admiral Davis, who is responsible for providing high-quality medical care to over 2,500,000 active duty and retired Navy and Marine Corps personnel and their families, requested that the presentation ceremonies be held at the National Naval Medical Center so that he could receive the medal in a patient-care facility.

The citation accompanying the medal said of Admiral Davis, "His innovative and farsighted management of the Medical Department resulted in numerous significant improvements to the health-care delivery system of the Navy.

"Vice Admiral Davis directed an active program of constructing new medical facilities and refurbishing

others to insure that they were capable of providing the broad range of services required by the increasingly complex practice of naval medicine. He provided additional educational and training programs for the Navy's health-care personnel and directed the establishment of a Physician's Assistant Program to provide the additional training to selected members of the Hospital Corps that will allow them to assume many of the more routine patient-care responsibilities.

"Foremost among the improvements accomplished under Vice Admiral Davis' command as the Surgeon General was the establishment of the first Naval Regional Medical Center, a program of regionalizing medical resources that has proved to be, in the Tidewater, Virginia, area, an overwhelming success and one that will be established in other areas where there is a high concentration of Navy and Marine Corps personnel."

Admiral Davis has served as Surgeon General since February 1969. Prior to that he served as Commanding Officer of the Center. He has also served as Commanding Officer of the Naval Hospital, NNMHC, 1965-1968.



NATION'S THIRD HIGHEST AWARD WARRANTS SMILES OF APPROVAL—Secretary of the Navy John W. Warner (right) congratulates the Navy's Surgeon General, VADM George M. Davis, MC, USN, following an award ceremony conducted at the National Naval Medical Center (NNMC), Bethesda, Md., in which ADM Davis received the Distinguished Service Medal. Mrs. Davis (left) attended the ceremony, as did Vice Chief of Naval Operations ADM Ralph N. Cousins.—PAO, NNMC, Bethesda, Md.

Admiral Davis, a native of Bixby, Okla., is the son of George M. and Letty F. Davis. He attended North-eastern State Teacher College of Oklahoma and received the Bachelor of Science Degree in medicine and the degree of Doctor of Medicine from the University of Oklahoma School of Medicine at Oklahoma City.

Admiral Davis is certified by the American Board of Internal Medicine. He is a Fellow of the American College of Physicians, a Fellow of the American College of Chest Physicians, and a Fellow of the American College of Cardiology. He is also Governor for the Navy of the American College of Cardiology, Governor for the American College of Physicians, and Delegate to the American Medical Association.

In addition to the Distinguished Service Medal, Admiral Davis is entitled to wear the Navy Commendation Medal with Bronze Star and Combat Distinguishing Device; the Presidential Unit Citation with Bronze Star and Fleet Marine Force Combat Operations Insignia; the American Defense Service Medal with Bronze Star; the American Campaign Medal; the Asiatic-Pacific Campaign Medal with three Bronze Stars and the Marine Force Combat Operations Insignia; the World War II Victory Medal; the National Defense Service Medal with Bronze Star; the Korean Service Medal with two Bronze Stars; Vietnam Service Medal with Bronze Star; the Korean Presidential Unit Citation with clasp; the Philippine Liberation Ribbon and the United Nations Service Medal.—PAO, NNMC, Bethesda, Md. 🇺🇸

(Continued from p. 32)

to attend). This practice will ensure attendance and, usually, these reservations can be cancelled if authority for attendance is not granted. AHA conferences are often filled more than a month in advance.

Please let me know if I may be of further service to the "needs of the Navy."

LCDR John R. Wheeler, MSC, USNR-R
American Hospital Association,
Staff Associate, Division of Management Review;
840 North Lake Shore Drive,
Chicago, Ill. 60611 🇺🇸

DENTAL SCHOLARSHIP STUDENTS SELECTED

Fifteen dental students have been selected from among approximately 550 applicants to participate in the Naval Dental Scholarship Program. The selectees and 25 officers who participated in 1971 constitute a group of 40 men who are attending dental school under Navy sponsorship. The new officers and the dental schools which they will attend are listed below.

First Year Level (7)

<i>Name</i>	<i>Dental School</i>
Creal, Albert F., Jr.	Virginia Commonwealth
Elzie, Theodis (nmn)	Meharry
Galich, John W., Jr.	North Carolina
Kratochvil, Frank J., III	Georgetown
Larson, Lewis C.	Florida
Reder, Daniel G.	Baylor
Walker, Dana L.	Georgetown

Second Year Level (3)

Alvis, Stephen G.	Virginia Commonwealth
Knoedler, George A., Jr.	Marquette
Smith, Paul B., Jr.	Emory

Third Year Level (3)

Kippa, Terry L.	Iowa
Love, Patrick J.	Nebraska
Mitchell, Douglas E.	Missouri (Kansas City)

Fourth Year Level (2)

Nieten, Jerry G.	Indiana
Strunk, William M., II	Temple

Of the seven freshmen selected, three were Navy line officers, one was a Marine Corps officer, and one was an active duty dental technician. All juniors and seniors selected were in the Early Commissioning Program (1925I). ☘

NAVAL RESERVE FITNESS REPORTS

Reports on the fitness of a Naval Reserve officer constitute a most important part of his record. They provide a picture of his performance from date of initial commissioning until separation. Fitness reports, along with Annual Qualifications Questionnaires (AQQ's) form the primary basis for selecting reserve officers for promotion. Realistic, objective evaluations

of individuals, based upon information contained in these two documents, are essential to accomplish this task.

In spite of the importance attached to this report, submission is occasionally overlooked. During a recent meeting of a Medical Corps Selection Board, five records examined were without fitness reports for a minimum of three to a maximum of nine years.

Every effort is made at BUPERS level to keep Fitness Report Jackets current, but when tens of thousands of these records are involved it becomes virtually impossible to insure that all discrepancies will be noted and corrected in a timely manner.

Recognizing the enormity of such a task, primary responsibility for preparation and submission of the fitness report was established as twofold. The officer reported on is required to submit his report at the proper time to his reporting senior and that senior is responsible for completion and forwarding of the report to BUPERS. A tear-off receipt form has been designed to assist reserve officers in determining whether all fitness reports due them have been received by the Chief of Naval Personnel. Upon receipt of the report in BUPERS, the receipt form is appropriately date stamped and mailed to the officer concerned for retention in his personal file. If this notification is not received in a reasonable time after report submission date it would be to the benefit of the individual involved to determine the reason for nonreceipt.

As a general guideline, regular and concurrent annual reports are to be submitted as of 30 June each year. A regular or concurrent detachment report must be submitted upon the permanent detachment (or death) of an officer or his reporting senior.

BUPERS Instruction 1611.15 deals specifically with fitness reports for Naval Reserve officers participating in drill programs, including training and support billets. This directive outlines general policy, defines the types of reports, lists submission dates, and assigns responsibility for preparation and submission. It is an instruction worth reviewing.—Code 36, BUMED. ☘

RADM KAIRE'S FROCKED

In ceremonies held in the Surgeon General's office on 5 July, CAPT Anthony K. Kaires of the Navy Dental Corps was promoted to Rear Admiral. Along with his new rank, Dr. Kaires also assumed duties as the Inspector General, Dental and Assistant Chief of the Dental Division, Bureau of Medicine and Surgery.

The son of Anthony and Lena Kaires, RADM Kaires attended Brooklyn College and the New York University



RADM A.K. Kaires signs his appointment orders upon his promotion to Rear Admiral on 5 July in the presence of (left to right): VADM G.M. Davis, Surgeon General of the Navy; his daughter Cynthia, wife Pauline, and daughter Pamela.

College of Dentistry from which he received the degree of Doctor of Dental Surgery in 1942. He was commissioned Ensign in the U.S. Naval Reserve on 16 June 1941 and in 1942 was appointed LT(jg) in the Dental Corps of the Naval Reserve. He subsequently advanced in rank to that of Captain, having transferred from the Naval Reserve to the U.S. Navy in 1946. His selection for the rank of Rear Admiral was approved by the President on 6 May 1971.

Dr. Kaires has the American Campaign Medal; Asiatic-Pacific Campaign Medal; World War II Victory Medal; China Service Medal and the National Defense Service Medal with Bronze Star. He is also a member of the American Dental Association and a Fellow in the American College of Dentists and American Prosthodontic Society. He is an honorary member of the Philippines Dental Association and the Armed Forces Dental Association.

Admiral Kaires is married to the former Pauline McNally and they have two daughters: Pamela, who is attending George Washington University School of Medicine under the Navy's Medical Scholarship Program, and; Cynthia who is attending the School of Nursing at Villanova University, as a member of the Navy's Nurse Corps Candidate Program.—PAO, BUMED.

PLEA FOR JOURNALS

The Dental Division, Bureau of Medicine and Surgery, needs issues of the Journal of Periodontology and the Journal of Prosthetic Dentistry from the time they were published up to the present. If anyone has any

of these issues he would be willing to donate to the Dental Division, please mail them to the Chief, Bureau of Medicine and Surgery, Code 611, Navy Department, Washington, D.C. 20390. Appreciate it.

BUMED VIEW OF ALCOHOLISM

Alcoholism is a serious threat to the individual, his family, his community, industry, and the military services. Department of Defense and Secretary of the Navy instructions were issued to implement new policies on alcoholism which require enlightened attitudes and techniques by command and Medical Department personnel. Alcoholism is preventable and treatable. An alcoholic is no longer considered physically unfit for continued military service or employment because alcoholism can be arrested. To treat alcoholism effectively, it must be viewed objectively and freed from stigma.

Although the incidence of alcoholism is not accurately established, conservative estimates indicate that there are over seven million alcoholics in the United States. Seventy percent of the population over 18 years of age do drink and of these, eight percent develop alcoholism. Of the 18 percent who are heavy drinkers, 40 percent eventually develop alcoholism. Alcoholism is the third leading cause of death in the U.S. Fifty percent of all fatal traffic accidents involve alcohol. Ninety-seven percent of all alcoholics are employed, and only three percent are on "skid row." The naval service is estimated to have 30,000 alcoholics. The estimated cost per alcoholic is between \$1,500 and \$4,000 per year in decreased efficiency, poor decisions, and absenteeism. The cost in human suffering and wasted lives is inestimable. Alcoholism leads to numerous severe complications, mental and physical, which can totally incapacitate a previously highly-productive member of society.

The Bureau of Naval Personnel has been developing an alcohol abuse control program which includes education and rehabilitation. The educational approach will be preventive, making available, through multimedia presentation, pertinent information on the effects of alcohol and alcohol addiction. A referral network of voluntary collateral-duty counselors assists commanding officers with early identification of specific cases.

BUMED is cooperating with the Bureau of Naval Personnel in the rehabilitation aspects by developing a program comprehensive enough to ensure treatment and rehabilitation for individuals identified as having

alcohol problems. To provide for a more unified approach and to ensure maximum use of professional resources, educational materials will be distributed and seminars planned in regional locations to present current treatment and rehabilitation techniques, and other pertinent information, to medical officers.

Early identification of the potential alcoholic is essential and will occur at his command and in our medical facilities in a variety of ways. The obvious case needs no further discussion. In every hospital and dispensary, however, we see patients with fractures, depressive reactions, cirrhosis, pancreatitis, neuritis, vitamin deficiencies, hepatitis, convulsions, psychoses, and many other clinical conditions where the primary problem is alcoholism. Sometimes alcoholism is not recognized, is ignored, or even denied. Concealing alcoholism with the diagnosis of other conditions is not meeting our responsibilities.

Evaluation, detoxification, and primary rehabilitation will be available at every naval hospital. More extensive treatment and rehabilitation will be conducted at several Naval Alcohol Rehabilitation Centers and at smaller Alcohol Rehabilitation Units strategically located in areas with a large concentration of Navy personnel. Definitive care will occur at both types of alcoholic treatment facilities, with greater resources available at the Centers. Assignment and transfer of individuals who require the more extensive care available at Alcohol Rehabilitation Centers or the Alcohol Rehabilitation Units will be regulated by ASMRO.

The treatment of alcoholism in the Navy includes several principles that need to be emphasized. Detoxification, drying out, and treatment of related physiological problems are exclusively a Medical Department responsibility. All alcoholics should be allowed at least an additional month of enforced sobriety during which they must concentrate intensively upon their rehabilitation. Association with Alcoholics Anonymous is encouraged. Involvement of families is desirable. Expert counseling and outpatient follow-up is mandatory and will usually be required on a long-term basis. Denial of a need for treatment is to be expected in initial stages, but should not be accepted as a deterrent to successful intervention.

The alcoholic rehabilitation programs developed locally must be multifaceted and geared to local resources including: the utilization of qualified counseling, Alcoholics Anonymous, Antabuse and other indicated medications, marriage counseling, psychotherapy when indicated, proven educational methods, and other techniques as applicable. The ultimate success of rehabilitation can only result from a combination of effective treatment and rehabilitation methods, and truly motivated patients.—“Dear Doctor” letter of 4 Aug 1972. ☛

NAVY PARTY AT ACS MEETING

The Annual Clinical Congress of the American College of Surgeons will be held in San Francisco from 2 to 6 October 1972. A Navy cocktail party has been a traditional part of each meeting through the years. These functions have afforded an opportunity for the past and present naval surgeons to meet and reminisce.

This year a “no-host” Navy cocktail party is planned for 1830, Wednesday evening, 4 October 1972 at the Marines’ Memorial Club in San Francisco. A charge of \$2.50 per person will be made for hors d’oeuvres. Reservations may be made by sending a check for this amount to Captain V.H. Fitchett, MC, USN; Naval Hospital, Oakland, California 94627. If reservations are not made, payment will be received at the door. ☛

NEW NAVY COMMAND IN SAN DIEGO

On 1 July 1972 the Naval Regional Medical Center, San Diego, Calif., was commissioned at the direction of the Chief of Naval Operations. The purpose of this new organization is to guide and direct the San Diego Navy Health Care Delivery System. The new command is comprised of the medical departments of the following stations:

- Naval Air Station, Miramar
- Naval Air Station, Imperial Beach
- Naval Air Station, North Island
- Naval Training Center, San Diego
- Naval Supply Center, San Diego
- Naval Station, San Diego
- Fleet Anti-Submarine Warfare School, San Diego
- Naval Electronics Laboratory Center, San Diego
- Naval Amphibious Base, Coronado
- Naval Communication Station, San Diego
- Marine Corps Recruit Depot, San Diego

The Naval Hospital, San Diego, Calif., remains as a separate command, but functions as an integral element of the Health Care System, as does the Naval Regional Medical Center.

RADM H.G. Stoecklein, MC, USN, is the Director/Commanding Officer of the Naval Regional Medical Center, and also serves as Commanding Officer of the Naval Hospital and District Medical Officer.

The first and foremost objective of this new regionalization concept is to provide improved health care services for all military personnel, active and retired, and to render this same care to their sick and injured

dependents. In carrying out this objective, the Naval Regional Medical Center will embrace the latest concepts in medicine and administration.

The impact of this new command will not be felt immediately as most of the changes being effected at this time are of an administrative nature. However, two expanded clinics, one at NAS Imperial Beach and another at NAS Miramar, are being modernized and readied for use later this summer.

New innovations, involving personnel, will not be phased in immediately because of the usual summer shortage of Medical Department personnel, particularly doctors. Hopefully, when this shortage is corrected, it may be possible to start specialty clinics and extend

hours of operation at several of the dispensaries. The Director of the Naval Regional Medical Center requests the cooperation, understanding and patience from all users of Navy medical facilities in the San Diego area during this period of shortage.

It is the Naval Regional Medical Center's intention to continually inform patients, staff members, and commanding officers of the accomplishments to date, innovations planned for the future, and the dates they will be implemented.

This news will be released periodically through television, radio, newspapers, station papers, flyers and other forms of news media.—PAO, Naval Regional Medical Center, San Diego, Calif. 🇺🇸

SIX OB/GYN NURSE PRACTITIONERS

The first Navy class of OB/GYN (Obstetrics/Gynecology) Nurse Practitioners has completed six months of intensive training at the Naval Hospital, Portsmouth, Va.

Members of the first graduating class and their new duty stations are: LCDR Kathryn Campen, Naval

Hospital, Portsmouth, Va.; LCDR Dorothy Emter, Naval Hospital, Newport, R.I.; LCDR Joyce Robel, Naval Hospital, Camp Lejeune, N.C.; LT Karen Oberhausen, Naval Hospital, Portsmouth, Va.; LT Frankie Lukey, Naval Hospital, Charleston, S.C.; and LT(jg) Joyce Vickers, Naval Hospital, Orlando, Fla.



FIRST GRADUATING CLASS — Members of the Navy's first class for OB/GYN (Obstetrics/Gynecology) Nurse Practitioners pose with RADM Alene B. Duerk (fourth from left), Chief of the Navy Nurse Corps, who was the principal speaker at their graduation; and RADM Willard B. Arentzen, MC, USN (center), Commanding Officer of the Naval Hospital, Portsmouth, Va., where the course was conducted. CDR Betty A. Meriwether, MC, USN (fourth from the right), director of the OB/GYN Nurse Practitioner program, is proud of her first class. From left to right are: LCDR Joyce Robel, LCDR Kathryn Campen, LCDR Dorothy Emter, RADM Duerk, RADM Arentzen, CDR Meriwether, LT Karen Oberhausen, LT(jg) Joyce Vickers, and LT Frankie Lukey.—PAO, Naval Regional Medical Center, Portsmouth, Va.

The Navy initiated this course to provide appropriate training and experience for a select group of nurses to relieve obstetricians and gynecologists of routine outpatient care. This, in turn, allows doctors to spend more time with complicated cases. The course combines extensive formal classroom work (over 1,000 hours) with practical experience under the close supervision of the Portsmouth Naval Hospital staff.

CDR Betty A. Meriwether, MC, USNR, director of the OB/GYN Nurse Practitioner Program, termed the maiden effort a success. "Our first class of students far exceeded my expectations," CDR Meriwether noted.

RADM Alene B. Duerk, Chief of the Navy Nurse Corps, was the principal speaker at graduation ceremonies held on 16 June. Other participants in the ceremony included RADM Willard P. Arentzen, MC, USN, Commanding Officer of the Naval Hospital, Portsmouth, and CAPT Robert Baker, MC, USN, Chief of the Department of Obstetrics and Gynecology at the hospital.—PAO, Naval Regional Medical Center, Portsmouth, Va. 🌿

VECTOR CONTROL SPECIALIST RECERTIFICATION COURSE, 6-10 NOV 1972

A one-week course for Vector Control Specialist Recertification is scheduled for 6 November – 10 November 1972 at the Disease Vector Ecology and Control Center, NAS, Jacksonville, Fla. The course is open to Medical Department personnel of the Navy and Coast Guard who have completed PMT school or who have been previously certified in vector or pest control by either DVECC, Alameda, Calif., or Jacksonville, Fla.

The objective of the course is to review pest biology and control, as well as to discuss recent pest-control procedures. Satisfactory completion of the course will result in Recertification as a Vector Control Specialist.

Further information and quotas can be obtained from: Navy Disease Vector Ecology and Control Center, Box 43, Naval Air Station, Jacksonville, Florida 32212. AUTOVON: 942-2425, 904-772-2424. 🌿

FLIGHT SURGEON GRADUATES

RADM J. Lee Holland, MC, USN (Ret.), stressed the importance of naval flight surgeons getting acquainted with naval aviators whose health they safeguard, when he addressed physicians who graduated from the Naval Aerospace Medical Institute, Pensacola, Fla., on June 15. The Admiral discussed incidents that occurred

during his 36 years in the Navy and said he hoped the newly designated flight surgeons would find their time in the Navy as rewarding as his own.

Introducing Admiral Holland as the commencement speaker, CAPT Marvin D. Courtney, MC, USN, Commanding Officer of the Institute at that time, recalled that the Admiral's career included several tours of duty in Pensacola where he is now living in retirement.

Before presenting the Navy Surgeon General Award to LCDR Clyde H. McAllister as the outstanding graduate of Flight Surgeon Class 72-2, RADM Oscar Gray Jr., MC, USN, Commanding Officer of the Naval Aerospace Medical Center, congratulated all of the graduates and their families, and urged the doctors to participate fully in all functions of the units to which they are assigned as flight surgeons. "Your acceptance as members of the team is automatic by virtue of your positions, but the extent of your continued acceptance will depend entirely on the degree of your participation socially and every other way," RADM Gray stated.

When Admiral Gray called Dr. McAllister forward to be honored, his colleagues gave him a standing ovation to signify their approval of the selection of their class leader as the outstanding graduate. LCDR McAllister received his M.D. degree from Johns Hopkins University School of Medicine in 1965 and served six years with the Marines before reporting to Pensacola in Jan 1972 for the six-month course.

Mrs. Clyde C. McAllister of Pittsburgh, Pa., was among the attendees and pinned the gold flight surgeon wings on her son's white uniform.

Over 4000 naval flight surgeons have been trained at the Institute. Graduating bachelors frequently choose their mothers, or classmates' wives, to pin on the gold wings received during ceremonies. LT John F. Fisher, MC, USN chose his grandmother, Mrs. Frank Fisher of Pensacola, for the honor of pinning on his flight surgeon wings.—PAO, Naval Aerospace Medical Center, Pensacola, Fla.



THE OUTSTANDING PHYSICIAN IN HIS CLASS—LCDR Clyde H. McAllister, MC, USN (right) receives the Navy Surgeon General Award from RADM Oscar Gray Jr., MC, USN (left), Commanding Officer, Naval Aerospace Medical Center in graduation exercises held at the Center. 🌿

OFFICIAL INSTRUCTIONS AND DIRECTIVES

FM CNO TO NAVOP (115)

*Subj: Alcohol Abuse and Alcoholism
Among Naval Personnel*

*Ref: (a) SECNAVINST 5300.20 of
18 May 72*

1. By reference (a), SECNAV has focused attention on a matter that merits Navy-wide concern, that of the serious problem of alcoholism among naval personnel. I have directed expanded effort in areas of education and rehabilitation.

2. The Navy Drug and Alcohol Abuse Advisory Council chaired by CHNAVPERs will provide overall guidance in implementing the Navy Alcohol Abuse Control programs. Interim guidance may be obtained from Pers-PC, Executive Director of the Council. Education in alcohol abuse will be an all-hands endeavor. Knowledge of and support for our treatment and rehabilitation programs are the responsibility of all command supervisory and support personnel. Though an individual must assume the responsibility for obtaining treatment, commands must make every effort to get the alcoholic and alcohol abuser into a treatment program whether they first seek it or not.

3. I do not desire any relaxation in the standards of behavior/performance/discipline. Where disciplinary action is taken, consideration should be given to the judicious use of suspended punishment to channel an alcoholic into an effective treatment program. Alcoholism by itself, however, should not be considered as grounds for disciplinary action.

4. For many years the alcoholic has been stigmatized, ignored or "covered up." The success of our efforts hinges largely on our understanding that the recovered alcoholic can be a stable, productive member of our Navy, thereby encouraging those with problems to seek help without fear of undue career jeopardy. Those recovered alcoholics currently serving on active duty can provide valuable assistance to the commands in carrying out this program.

5. I strongly encourage all hands to familiarize themselves with provisions and policy contained in reference (a). Together we can overcome this problem which acts as a needless detriment to the health and effectiveness of many of our best Navy men and women.

FM CNO TO NAVOP (116)

*Subj: Equal Rights and Opportunities
for Women in the Navy*

1. There has been much discussion and debate with respect to equal opportunity for women in our country over the past few years. My position with respect to women in the Navy is that they have historically played a significant role in the accomplishment of our

naval mission. However, I believe we can do far more than we have in the past in according women equal opportunity to contribute their extensive talents and to achieve full professional status. Moreover, the immensity of an all-volunteer force has heightened the importance of women as a vital personnel resource. I foresee that in the near future we may very well have authority to utilize officer and enlisted women on board ships. In view of this possibility we must be in a position to utilize women's talents to help us achieve the size Navy we need under an all-volunteer force environment and still maintain the sea-shore rotation goals for all naval personnel towards which we have been working. To this end the Secretary of the Navy and I have established a task force to look at all laws, regulations and policies that must be changed in order to eliminate any disadvantages to women resulting from either legal or attitudinal restrictions.

2. As another step toward ensuring that women in the Navy will have equal opportunity to contribute their talents and background to accomplishment of our missions, we are taking the following actions:

a. In addition to the enlisted ratings that have recently been opened, authorize limited entry of enlisted women into all ratings.

b. The ultimate goal, assignment of women to ships at sea, will be timed to coincide with full implementation of pending legislation. As an immediate step, a limited number of officer and enlisted women are being assigned to the ship's company of USS SANCTUARY as a pilot program. This program will provide valuable planning information regarding the prospective increased utilization of women at sea.

c. Pending formal changes to Navy Regulations, suspend restrictions regarding women succeeding to command ashore and assign them accordingly.

d. Accept applications from women officers for the Chaplain and Civil Engineer Corps, thereby opening all staff corps to women.

e. Expand assignment of technically qualified unrestricted line women to restricted line billets and, at the time of legislative authorization, permit them to request designator changes.

f. Offer various paths of progression to flag rank within the technical, managerial spectrum in essentially the same manner as we are contemplating for male officers.

g. Assign the detailing of unrestricted women officers to their cognizant grade detailers.

h. Increase opportunity for women's professional growth by:

(1) Eliminating the pattern of assigning women exclusively to certain billets; and

(2) Assigning qualified women to the full spectrum of challenging billets, including those of briefers, aides, detailers, placement/rating control

officers, attaches, service college faculty members, executive assistants, special assistant to CNO, MAAGS/ Missions, senior enlisted advisors, PEP, etc.

i. Equalize selection criteria for naval training by:

(1) Opening midshipmen programs to women at all NROTC campuses effective in FY 74; and

(2) Considering women for selection to joint colleges (National War College/Industrial College of the Armed Forces).

3. Finally, I enjoin all commanding officers and others in positions of authority to actively reflect the spirit and intent of this message in their own command regulations, policies and actions. Specifically, I expect each commanding officer to:

a. Initiate similar equalization actions in matters within their purview to ensure that women are accorded full trust and responsibility to function in their assigned position or specialty.

b. Be guided by standards of duty, performance and discipline which are truly equitable for both women and men.

4. In summary, we all must actively work together in order that we may more equitably include women in our one-navy concept.

MANUAL OF THE MEDICAL DEPARTMENT

Change 75 of 31 May 72

This change:

a. Revises art. 1-3 to reflect recent BUMED organizational changes.

b. Amends those provisions in sec. VIII of chap. 6 and sec. I of chap. 9 which establish the Dental Technicians group as a component of the enlisted Hospital Corps. The amendments remove the Dental Technician rating from the Hospital Corps and constitute the Dental Technician group separately under the general aegis of the Dental Corps.

c. Revises art. 15-13 to modify the visual acuity standards and refractive error limits for certain programs.

d. Adds art. 15-30(1)(q) "Abnormal Hemoglobin, Including Sick Cell Trait," on reporting of diving-duty physical examinations.

e. Revises art. 15-45(7)(b) to reflect the requirement for a copy of the SF-88 in the case of diving personnel to be forwarded to BUMED, vice the original.

f. Updates art. 15-72(2)(c)(3) to bring current the listing of activities in the Pensacola area in connection with the boards of flight surgeons.

g. Revises art. 15-82, items 16 and 18, concern-

ing the preparation and disposition of SF-88 and 93 as necessitated by the recently approved change to art. 15-46 which eliminated the annual physical examination of Naval Academy midshipmen and of NESEP and NROTC applicants and students.

h. Amends art. 16-18(5) to set forth the requirement that facsimile signature stamps will *not* be used in the Health Record.

i. Revises art. 16-26(1) concerning the maintenance of Health Records for Reserve members not on active duty and also reflects the recent changes in activity designations and record-keeping functions.

j. Deletes chap. 24, "Fiscal Management." Guidance for financial management in hospitals is provided in "The Financial Management Handbook," NAVMED P-5020.

BUMEDINST 5101.3 of 12 Jun 72

Subj: Electric Beds

The hazards and potential dangers of using electric beds, coupled with the complexity of other electric/electronic equipment normally attached to patients in medical, pediatric, surgical, and cardiac intensive care units, have rendered it professionally imprudent to continue the use of electric beds in such areas. In view of the above, the following action is required:

(a) remove electric beds from special care areas, substituting manually-operated mechanical or hydraulic beds; (b) discontinue the use of conductive mattress covers in special care units; (c) ensure that electric beds in areas other than special care units receive preventive maintenance inspection and follow-up work at least every six months (NAVMED Form 5101/1).

Exceptions: BUMED is working with selected activities in the development of unique systems such as isolated power centers with equipotential grounding. Activities with electric/electronic safety installations in special care areas may submit letter requests to use electric beds in those areas.

BUMEDINST 5710.1 of 30 Jun 72

Subj: Clearance of attendees for International Conferences, Meetings, Short Courses, Symposia, and Seminars, held in foreign countries; procedures for

In accordance with the requirements of SECNAV-INST 5710.20 series, BUMED-commanded activities desiring to either authorize leave or issue TEMADD orders for staff members' attendances at subject

functions shall request clearance through BUMED (Code 3) at least six weeks in advance of the prospective attendance dates. Letter requests shall contain the following information: (1) member's name, grade/rate, SSN; (2) present staff assignment; (3) function title, sponsor, geographic location, and inclusive dates; (4) temporary residence/address while on this period of leave/TEMADD; and (5) the capacity in which the member will be attending the subject function.

BUMEDINST 6320.45 of 26 Jul 72

Subj: Newborn identification; procedures for

From a medicolegal viewpoint, and in the interest of maintaining a high standard of patient care, a permanent, positive newborn identification record is vital to resolve any questions regarding the relationship of mother to infant. (See enclosure (1) of this instruction entitled, "Footprinting of Infants," reprinted from the FBI Law Enforcement Bulletin, Oct. 1966). Although most naval activities use some means of identification, procedures vary considerably from one activity to another and, in some cases, are clearly inadequate. Accordingly, the Bureau considers that the establishment of standard procedures for newborn identification is of the utmost importance. This instruction prescribes the procedures for the identification of newborns at naval activities in accordance with the *Accreditation Manual for Hospitals* by the Joint Commission on Accreditation of Hospitals, 1970; and the *Standards and Recommendations for Hospital Care of Newborn Infants* by the American Academy of Pediatrics, 1971 edition. This instruction requires that newborn identification data be recorded on NAVMED 6320/11, Newborn Identification, which will be available from Cog I stock points of the Navy Supply System on or about 20 Oct 1972.

BUMEDNOTE 6230 of 23 Jun 72

Subj: Cholera immunization for travelers

In view of the approach of the cholera season, immunization requirements should be reemphasized to prevent possible inconvenience to travelers. The following updates cholera immunization requirements contained in BUMEDINST 6230.1F.

All persons under Navy cognizance (those persons traveling on Navy aircraft or vessels, or whose cost of transportation is borne by the Dept. of the Navy), including dependents and civilians residing in or traveling to or through the following areas are required to have

a valid Cholera Immunization Certificate (PHS-731) until further notice: All Asia and Africa and islands adjacent thereto; Europe, except: Ireland, Great Britain, Belgium, Netherlands, Luxemburg, Germany, Denmark, Sweden, Norway, Finland, and Poland. Persons traveling at their own expense on scheduled or chartered carriers are not subject to these provisions; however, it is recommended that these persons also have a valid certificate of cholera immunization. The responsibility of providing and maintaining the proper immunization status of each individual for whom the Navy has cognizance is that of the permanent duty station or detaching station of the individual or sponsor. ☛

✠ In Memoriam ✠

CAPT Cleo R. Allen, MSC, USN (Ret.) died 24 Jun at the Naval Hospital Bethesda, Md. He was born in Carroll County, Ind., on 7 Oct 1916. CAPT Allen attended Purdue University for one year prior to enlisting in the Navy as an Apprentice Seaman on 2 Jul 1937. After advancing through the enlisted ranks to CWO, he was promoted to ENS (HC) in Jul 1945. Three years later he was appointed LT(jg), MSC, USN.

In Jul 1944 CAPT Allen completed a course of instruction at the Naval School of Hospital Administration, Bethesda, Md. He later served consecutively as an instructor at the Hospital Corps Schools at Bainbridge, Md; Great Lakes, Ill.; and Portsmouth, Va. Through his diligent and determined pursuit of voluntary off-duty studies, CAPT Allen earned a B.A. degree from the San Diego State College in 1957 and a M.A. degree in education from East Carolina College in 1963.

Later assignments included duty as Executive Officer, Field Medical Service School, Camp Lejeune, N.C.; and as Administrative Officer, Naval Hospital Boston, Chelsea, Mass. He was promoted to the rank of CAPT on 1 Sep 1968.

On 15 Aug 1961 CAPT Allen reported to the Bureau of Medicine and Surgery as Assistant to the Inspector General, Medical, where he served until his retirement for permanent disability on 1 Feb 1972. He is survived by his wife, Marjorie and two daughters.

CAPT David O. Bowman, MC, USN (Ret.) died 5 Aug in Waynesville, N.C. Born on 15 Jan 1887 in Bakersville, N.C., he was 85 years of age at his death.

He attended Wake Forest College, N.C., and Berea College, Ky.; in 1918 he received his M.D. degree from Western Reserve University College of Medicine.

Dr. Bowman was appointed LT(jg), MC, Naval Reserve Force immediately upon graduation. He was appointed a lieutenant in the Medical Corps of the regular Navy in 1920. His sea duty assignments included duty aboard the USS BRIDGE, TUSCULOOSA and HENDERSON. During World War II he was Chief Medical officer in charge of all medical units on Guam, M.I., helping to build and equip four Army and four Navy hospitals on the island.

Dr. Bowman, who received the Bronze Star Medal, retired in Aug 1946. He is survived by his wife, Dorothy; four sisters; and five brothers.

LCDR Barney O. Green, MSC, USN (Ret.), age 52, died 25 Jul at the Naval Hospital, Bethesda, Md. Mr. Green was born in Caruthersville, Mo. In Nov 1937 he enlisted in the Navy and subsequently advanced in rating, being appointed Pharmacist in 1945.

During World War II he served on board the destroyer USS BROWN which participated in eleven major naval engagements in the South Pacific. On 1 Oct 1950 Pharmacist Green was commissioned ENS, MSC, USN. He was later ordered to duty under instruction at the University of Michigan where he received his B.A. and M.A. degrees in Business Administration.

From Mar 1957 to Jan 1959, Mr. Green was the executive secretary of the aeromedical panel, Advisory Group for Aeronautical Research and Development, NATO, Paris, France. He later served as administrative assistant in the Physical Qualifications and Medical Records Division, Bureau of Medicine and Surgery.

LCDR Green's name was placed on the Retired List in Jul 1965. He is survived by his wife, Opal; a daughter, Linda; and a son, Barney.

CAPT Robert E. Henderson, MC, USN (Ret.) died 10 Jun at Sheridan, Wyo. He was born on 13 Jun

1894, in Omaha, Neb. After receiving his medical education at George Washington University and Hahnemann Medical College, Dr. Henderson was commissioned LT(jg), MC, USNR in Jul 1917. After serving four years on active duty, he was released to inactive duty in 1921 and engaged in private practice. He also served as Medical Director, Peoples Drug Stores and as RCA Regional Medical Consultant.

In 1942, Dr. Henderson returned to active duty, (USN), and was designated a flight surgeon. Subsequent duty assignments included several air stations and the aircraft carrier, USS WASP. CAPT Henderson's name was placed on the Retired List in Jul 1956.

LT Harold R. Monty, MSC, USN (Ret.) died 16 Jul at the Naval Hospital, Orlando, Fla. He was born in Woonsocket, R.I., and served in the Navy for 26 years. LT Monty was a member of the staff at the Bureau of Medicine and Surgery when he retired in 1955.

He was 72 years of age at the time of his death, and is survived by his wife, Lucy, and a brother.

CWO Charles H. Small, MSW, USN (Ret.), died at 55 years of age on 1 Aug at the National Naval Medical Center, Bethesda, Md. He was a native of Sommerville, Mass. In 1935 he enlisted in the Navy and served in the Pacific during World War II. He graduated from U.S. Naval School of Hospital Administration in 1945. Mr. Small transferred to inactive duty in the Fleet Reserve in 1956 and retired from the Navy in 1965.

After leaving active duty in 1956, he worked as a civilian budget analyst for the Bureau of Medicine and Surgery, where he was employed at the time of his death. Mr. Small is survived by his wife, Mary; two daughters; two sons; and seven grandchildren. ❀

TO JOIN NAVY NURSES AT SEA

Following closely in the wake of CNO's Z-Gram 116, the Bureau of Naval Personnel has assigned the first woman line officer to sea duty. LT(jg) Ann E. Kerr has been assigned as Administrative Officer aboard the hospital ship USS SANCTUARY (AH-17). She is the first of two women officers to be assigned directly to the ship's company. The second will be a Supply Corps officer.

LT(jg) Kerr was commissioned as a line officer on 18 Dec 1970. She has a B.A. degree from the University of California at Berkeley and is presently assigned to the Naval Air Test Facility, NAS Lakehurst, N.J. ❀

United States Navy Medicine

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HISTORY-MAKING EVENT—In a change-of-command ceremony held at the National Naval Medical Center on 4 Aug 1972, RADM Wade H. Hagerman, Jr., DC, USN relieved CAPT William G. Wohlfarth, Jr., DC, USN as Commanding Officer of the Naval Graduate Dental School. This is the first time in the School's 50-year history that an officer of flag rank has been ordered to assume the duties of CO, Naval Graduate Dental School.—PAO, National Naval Medical Center, Bethesda, Md.

U.S. NAVY MEDICINE